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INTERSTATE MIGRATION OF TUBERCULOUS PERSONS.

ITS BEARING ON THE PUBLIC HEALTH, WITH SPECIAL REFERENCE TO THE STATES OF TEXAS AND NEW MEXICO.¹

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The Effect of the Migration of Tuberculous Persons Upon the Health of Communities.

No subject is of greater moment than the one we are about to consider. If the coming of thousands into the arid region of the Southwest has had an appreciable effect upon the health of the residents of that section the fact should be known, and it at once constitutes good and sufficient reasons for the institution of strong restrictive measures. How dangerous is the consumptive, and what are the risks to which residents of communities patronized by the tuberculous are subjected? Are the dangers to health greater than in ordinary towns, and have the morbidity rates been affected? These are practical questions which seriously affect people in their every-day lives.

It is not our intention at this time to discuss whether or not infection is common in well-managed institutions, that question having long since been definitely settled. The statistics of Saugmann and Aufrecht seem to prove that tuberculosis specialists, nurses, and others working with the disease do not have a higher morbidity rate than ordinary people.

Conditions in the open resorts are vastly different. It is a natural assumption that they have proportionately the largest number of people actually excreting bacilli, and they should show, other considerations being equal, the highest morbidity rate from the disease. Our ideas regarding infection have changed so materially that we now believe that such a conclusion as this is unwarranted. The infection of tuberculosis and the development of the disease from a clinical standpoint are not synchronous, and years may elapse after exposure before the first manifestations show themselves; in fact some authors go so far as to state that chronic localized tuberculosis can never develop as the result of recent infection (Bushnell). To

¹ This is the third installment of this article. The second installment appeared in the Public Health Reports of Apr. 16, 1915, p. 1147.

those who may have acquired a degree of immunity in their youth, and by far the larger proportion of people are believed by some to have been so immunized, place infection does not assume the importance that it had under our old views of the disease, those who accept these theories largely rejecting the dangers, at least to adults, of house infection. For instance, "lung blocks" may not be actual sources of infection, but by exposing the inhabitants to exactly the same debilitating influences they predispose to the disease. On the other hand, a particular spot, such as an open resort, may infect, but the depressing influences, such as bad housing, unsanitary habits, etc., may be lacking, and the disease never manifest itself. Infection and development of the disease, then, are not similar terms, and the latter is what we shall be obliged to consider.

The arid region of the Southwest is one in which tuberculosis does not ordinarily thrive. This statement must be at once modified by exempting certain races—Indian and Mexican—among whom the disease shows as great a virulence as in any other section. Many explanations are offered for this apparent immunity. Early settlers are apt to be of selected stock, but quite the contrary holds true in this instance, many of these being the offspring of inferior grades. Again, newly settled districts do not at once show the results of insanitary conditions, but only after a lapse of years, and areas with a low density of population are likewise less susceptible to the invasion of disease. Overcrowding is less, industrial conditions are different, and outdoor life is more customary, all these being factors which undoubtedly exert an influence. We should recognize, then, at the start that this section does not exhibit as high a tuberculosis death rate as other districts.

The problem of determining actual conditions is complicated by the presence of a primitive people apparently peculiarly susceptible to the ravages of this disease, the Mexicans. That there is any connection between the influx of consumptives and the high tuberculosis death rate of these people is believed to be improbable, though certain physicians contend that contact with invalids is the source of their infection; however, this is a matter to be discussed later. Were they to be considered in our present figures the entire aspect of the question before us would be altered, and our conclusions necessarily would be entirely different. The death rates of the two classes will, therefore, be treated separately, and for the time being at least our facts and figures do not include the Mexicans. The presence of another supposedly susceptible racial division, the negro, in districts to the east, adds to the difficulties of our problem.

The first city to be considered is El Paso, the population of which was by the last census estimate 47,075. This city annually harbors over 4,000 consumptives. A few of this number are maintained in hospitals and sanatoria, and undoubtedly are properly instructed; others, under the care of visiting nurses or physicians, are directed

concerning prophylactic measures; but the vast majority, at least 80 per cent of the infected, use absolutely no precautionary measures. Spitting is promiscuous. Sputum cups are a great rarity, the writer never having observed one in use, and were one to be brought forth in a public place it would undoubtedly create as much excitement as in any eastern city. In the homes, coffee cans, baking-powder boxes, and other utensils are brought into use, to be thrown over into the next lot, perhaps, when filled. In the cheaper lodging houses the carpet is more often the receptacle, and there is not a boarding house in the city which has not been infected. The railway stations, street cars, stores, and other public places are daily invaded by consumptives, just as in any other open resort. All things considered, then, this should be an ideal place for the development of the disease.

In a resort of this character it is impossible to tell, either by length of residence or otherwise, whether certain persons are health seekers. People are secretive, especially in these days of prejudice, and the health belt is thronged with invalids who never have given indication of their infection. We must therefore adopt some other means than length of residence or the testimony of individuals to inform us who was or was not infected upon arrival to serve as the basis of our computations. This compels us at once to fall back upon the native-born population. Unfortunately, in a rapidly growing western town this class is extremely small, and that which is existent has not yet reached the age when tuberculosis manifests itself. However, the writer has met a number of native-born El Pasoans; therefore they do exist. Our conclusions must necessarily be based upon mortality rather than morbidity.

The following are the only deaths from tuberculosis recorded as among native-born residents of El Paso during the 10-year period beginning January 1, 1904:

Year.	Case.	Age.	Facts concerning deceased.
1904	1	1 year 5 months....	Tuberculous meningitis.
	2	7 months.....	Scrofula; no other information obtainable.
1905	3	22 years.....	Pulmonary tuberculosis; was an athlete at college in the East; mother tuberculous.
	4	2 years 8 months...	Tuberculous meningitis.
1906	5	4 years 6 months...	Negro.
	6	15 years.....	Undoubtedly negro; name and residence indicate this.
1907	7	1 year 3 months....	Tuberculous meningitis.
	8	8 months.....	Do.
1908	9	21 days.....	"Hereditary tuberculosis"; mother tuberculous.
	10	2 years 7 months...	Tuberculous meningitis.
	11	7 months.....	Do.
	12	22 years.....	Mother Mexican; spent his life in Mexican surroundings.
	13	24 years.....	Glandular enlargement about the jaw; operation, but glands returned and enlargement became general; never pulmonary symptoms.
1909	14	1 year 4 months....	Tuberculous meningitis.
	15	5 months.....	Do.
	16	23 years.....	General tuberculosis.
1910	17	22 months.....	Child was ill with an acute infectious disease; mother tuberculous.
1911	18	7 months.....	Tuberculous meningitis.
1912	19	10 months.....	Tuberculous meningitis; father tuberculous.
	20	1 year 2 months....	Tuberculous meningitis.
1913	21	1 year 3 months....	Do.

In addition to the cases cited there were 86 Mexicans who comprise the native-born residents dying of tuberculosis during the 10-year period. Of the 21 recorded cases, 12 were diagnosed as tuberculous meningitis, a disease which presents a complex clinical picture. Of the remaining 9, 2 were negroes, and 1 proved to be a half-breed Mexican. This leaves us 6 cases to be accounted for. Case 2 was diagnosed as "scrofula." Case 3 was a frank case of the pulmonary form developing in a long-distance runner while in college in New York City. Case 9 was called "hereditary tuberculosis." Case 13 was probably not tuberculosis, and no facts could be ascertained regarding Case 16. Case 17 followed an acute infectious disease and was probably a broncho-pneumonia. Of these 6 cases, then, but 2 were of the pulmonary type and the diagnosis was somewhat improbable in the remaining 4.

The Census Bureau does not give us data regarding the number of native-born residents in a given community, and we therefore can not determine the tuberculosis death rate of this particular class, but certainly the list is not especially alarming. Accepting every meningeal case as really being of tuberculous origin, knowing that tuberculous meningitis is much more apt to occur in children than in adults, and that there are hundreds of native-born children in El Paso, and realizing that we are dealing with a city whose American population has varied from 15,000 to 35,000, is not the list of 12 deaths surprisingly small? Unlike pulmonary tuberculosis, this form of the disease does not require years to manifest itself; therefore if infection were of frequent occurrence, it is reasonable to expect that at least this type would be far more common. Moreover, it should be recalled that a large percentage of the children in this city are the offspring of tuberculous parents and living in intimate contact with persons actually excreting bacilli. Surely if infection were as common as we have been led to believe, and there were not some protective influences at work, the native-born death rate would be higher than this.

In the city of Albuquerque the same procedure was followed, with this difference: At El Paso it was only possible to consider the native city-born population, the climatic influences of the remaining sections of the State differing widely from the western. In New Mexico climatic conditions are approximately the same throughout, and from whatever section residents come they have been subjected to the same influences. Therefore at Albuquerque all New Mexican-born residents were classified as native born, and in this way the field was broadened materially.

During the 10-year period ending in 1913 there were 111 deaths from tuberculosis among native-born New Mexicans at Albuquerque;

of these, 97 were of Mexican descent. The remaining cases were as follows:

Year.	Case.	Age.	Facts concerning deceased.
1904	1	9 months.....	Tuberculous meningitis.
1905	2	20 months.....	Pertussis-measles-broncho-pneumonia-tuberculosis.
1906	3	7 months.....	Tuberculous meningitis.
1907	4	5 months.....	Indian.
1908	5	3 years.....	Tuberculous meningitis.
	6	14 months.....	Do.
	7	28 years.....	A negress.
1910	8	2 years.....	Tuberculous meningitis.
1911	9	48 years.....	Proved to be a Mexican.
	10	26 years.....	A negress.
	11	2 years.....	Tuberculous meningitis.
1913	12	22 years.....	No information obtainable.
	13	30 years.....	Proved to be a Mexican.
	14	4 months.....	Tuberculous meningitis.

In the 10-year period, then, there are but 14 cases to be accounted for. Of these, 7 were meningeal, 2 were of negresses, and 2 proved to be of Mexican and 1 of Indian origin. Case 2 was an American child of 20 months which not only had whooping cough, measles, and broncho-pneumonia, but was also supposed to be tuberculous, and case 12 was a woman of 22 concerning whom no facts could be gathered.

Similar figures have been worked out for San Antonio, but the problem there is more complicated, as the city partakes of the Gulf climate and has congested districts and other conditions favoring the disease. In the 10-year period there were 121 deaths among native-born whites, which in proportion to the population is slightly higher than at El Paso or at Albuquerque. In the remaining towns of New Mexico and Texas no reliable data could be gathered owing to the incompleteness of the death returns.

Are we warranted, in face of the fact that we know so little concerning the number of native-born residents in these two cities, in drawing any conclusions from these lists? It would seem that we are. We are certain that there are several thousand native-born children in El Paso, and proportionately even more at Albuquerque. Surrounded as they are by hundreds of consumptives, living as they do in intimate contact with infection, so far as our observations go they yet remain safe. Is it not a fair deduction, then, that adults, whose susceptibility is even less than that of children, are likewise in no serious danger?

In our efforts to determine the amount of tuberculosis developing in a given city we should not confine ourselves to the native-born population. A second method adopted at El Paso is probably of greater value, and that is the direct investigation of every case succumbing to the disease to ascertain whether its development preceded arrival. If accurate case records were kept this would be a valuable method of determining the exact number of indigenous

cases, but unfortunately physicians do not as a rule keep such records, and their memories are often defective. For this reason the writer was unable to consider cases which dated back more than two years, but the method is such a useful one that it should be maintained in every resort city. It is presumed that those who have been in the community but a short time came with the disease in an active stage, but those with a longer residence, which in this instance we have placed at five years, were possibly well upon arrival. The following comprise all persons dying of tuberculosis in the city of El Paso who had a longer residence in the State than five years, the information as to the status upon arrival being obtained from physicians, undertakers, relatives, or friends.

1913.

Case.	Age in years.	Years in State.	Status upon arrival.
1.....	26	12	Father and two sisters tuberculous; claims to have been well upon arrival.
2.....	46	6	Health seeker.
3.....	33	6	Do.
4.....	54	8	Do.
5.....	49	5	Do.
6.....	21	6	Do.
7.....	38	18	Do.
8.....	29	5	No information obtainable.
9.....	47	15	Health seeker.
10.....	49	22	Do.
11.....	34	34	Do.
12.....	42	8	No information obtainable.
13.....	44	44	Health seeker.
14.....	60	13	Do.
15.....	27	27	Do.
16.....	57	6	Do.
17.....	27	27	Do.
18.....	33	33	Do.
19.....	39	15	No information obtainable; negro.
20.....	20	13	Negro runstabout and drunkard; disease possibly contracted in El Paso.
21.....	33	8	Health seeker.
22.....	42	6	Negress; drunkard and lewd woman; also syphilitic; disease possibly contracted in El Paso.
23.....	26	26	Health seeker.
24.....	27	27	Health seeker; negro.
25.....	33	10	Health seeker.
26.....	30	9	Do.
27.....	33	13	Do.
28.....	29	5	Do.
29.....	57	8	Do.
30.....	40	9	Do.
31.....	52	30	Physician believes he was healthy when he came; disease followed typhoid.
32.....	19	5	Health seeker.
33.....	18	18	Do.
34.....	43	11	Do.
35.....	30	6	Do.
36.....	31	20	Do.
37.....	32	32	Do.
38.....	31	31	Do.
39.....	39	10	Do.

Of those with a longer residence than five years 32 were plainly health seekers; concerning 3 no information was obtainable, and in the remaining 4 there was a possibility of the disease having been contracted in El Paso. Of the 4, case 1 was a young woman whose father and two sisters were tuberculous and whose physician was suspicious that she too had had symptoms before arrival; case 20

was a dissipated negro; case 22 was a negress, a lewd and syphilitic woman; while case 31 was a man supposed to have been healthy.

1912.

Case.	Age, in years.	Years in State.	Status upon arrival.
1.....	37	21	No information obtainable; negro.
2.....	33	8	Health seeker.
3.....	35	5	Do.
4.....	28	7	Do.
5.....	42	42	Do.
6.....	47	11	Do.
7.....	47	8	No information obtainable; an alcoholic.
8.....	44	6	Health seeker.
9.....	19	10	Do.
10.....	37	37	Do.
11.....	38	6	Do.
12.....	56	56	Do.
13.....	26	5	Do.
14.....	44	44	Do.
15.....	45	11	Do.
16.....	34	7	Do.
17.....	26	7	Do.
18.....	21	21	No information obtainable.
19.....	71	50	Health seeker.
20.....	47	5	Do.
21.....	25	21	Not known to have been a health seeker, but died of tuberculous meningitis; no puncture.
22.....	40	6	No information obtainable; a confirmed alcoholic.
23.....	33	26	Came to El Paso at 6; well until marriage; pulmonary and intestinal tuberculosis.
24.....	26	22	Health seeker.
25.....	22	22	Do.
26.....	40	8	Do.
27.....	24	9	Do.
28.....	37	37	Do.
29.....	47	9	Do.
30.....	31	31	Do.
31.....	35	5	Do.
32.....	38	12	Do.
33.....	19	19	Do.
34.....	40	6	No information obtainable.
35.....	43	17	Health seeker.
36.....	24	24	Do.
37.....	24	24	Do.
38.....	23	23	Do.
39.....	48	45	No information obtainable; negro.
40.....	41	12	Health seeker.
41.....	46	5	Do.
42.....	43	18	Do.
43.....	56	14	Do.
44.....	33	12	Half-breed Mexican.
45.....	38	5	Health seeker.
46.....	33	9	Do.
47.....	30	30	Do.
48.....	29	29	Do.
49.....	32	5	Do.
50.....	31	5	Do.
51.....	28	28	Do.
52.....	40	10	Do.
53.....	45	20	No information obtainable.
54.....	32	7	Health seeker.
55.....	48	14	No information obtainable.
56.....	30	30	Health seeker.
57.....	32	5	Do.
58.....	58	18	Chinaman and opium fiend; disease probably contracted in El Paso.
59.....	33	12	Health seeker.
60.....	13	13	Syrian; lived in Mexican quarter during lifetime.
61.....	44	44	No information obtainable.
62.....	63	14	Not known to have been a health seeker, but died of tuberculous meningitis.
63.....	22	22	Health seeker.

Of the 63 cases 48 were unmistakably of health seekers. No information could be gathered concerning 9, and the remaining 6 could have developed the disease after arrival. Case 21 was meningeal, but with no lumbar puncture. Case 23 came to the city when young and

her disease followed childbirth. Case 44 proved upon investigation to be a Mexican half-breed. Case 58 was a Chinaman and an opium fiend. Case 60 was a Syrian, but without Mexican blood, who had lived in the Mexican district, and case 62 died from meningitis.

Summarizing, we have for the two-year period a list of 102 people, with a longer residence in the State than five years, dying of tuberculosis. Of these, 80 were health seekers; of 12 no information could be gathered, and the remaining 10 could have developed the disease in El Paso, but in almost every instance there were sufficient reasons, either in race, habits, or manner of life for the onset of the infection.

Let us combine our figures of the native-born population and those with a longer residence than five years. The population of El Paso is over 47,000. It is, we think, a reasonable conclusion that even in this rapidly growing western city 10,000 of this number are either native-born white Americans, not of Mexican descent, or people who have resided in the State for a period of five years; certainly no resident of El Paso will take exception to this estimate. Now, the tuberculosis death rate in the registration area in 1912 was 1.495 per 1,000, the lowest ever recorded; therefore in this two-year period there should have been just 30 deaths from the disease among this group of 10,000 citizens. What was the number—for we have the figures right before us? From the record of native-born residents given further back we learn that there were 3, all meningeal infections, and from our present lists, after eliminating the negroes, Mexicans, and Chinese, we select 6, making a total of 9. That is, the rate is not even one-third as great as that of the registration area. Truly, if infection were of common occurrence the mortality rate should demonstrate the fact, and are we not safe in stating from these very figures alone that the dangers to healthy individuals in this open resort are not any greater, and are apparently considerably less, than those of an ordinary city? Counting every case not clearly proven to have been of a health seeker as having developed the disease in El Paso, without eliminating a single person of the susceptible class, and basing our computation upon the low estimate of 10,000, we still have but 25 cases, a number even below that of the registration area. Does this indicate that the residents of that city are being infected by this influx of invalids? If they are, they seem not to have suffered seriously therefrom.

As we return to Albuquerque let us adopt a third method of determining the degree of danger in the resort cities. The tuberculosis death rate at all times bears a certain definite relation to the general death rate, although the decrease in the former has not kept pace with that of the latter, a fact which should be recalled whenever we manifest a tendency to congratulate ourselves upon our

successful warfare against the disease. In 1912 the general rate was 13.9 per thousand, while the tuberculosis rate was 1.495 per thousand; this for the registration area. Computing the ratio it is found that for every 9.2 deaths 1 was from tuberculosis; in 1911 the ratio was 1 to 8.9; in 1910, 1 to 9.3; and in 1909, 1 to 9; averaging 1 to 9.1 for the four-year period. Now, if conditions are such as to favor the development of tuberculosis it is reasonable to suppose that not only will this ratio be maintained, but that it will actually be exceeded, the second figure in our ratio falling as the number of tuberculosis deaths increases. Moreover this should be true of any particular class of citizens, either native born, or others.

Once again we are obliged to fall back upon our native-born population. In the two cities of El Paso and San Antonio the native-born population is mostly composed of the young, among whom the tuberculosis rate is exceedingly low and the general rate, owing to infants, high; it would therefore be manifestly unfair to base deductions upon the ratio in these two cities. But at Albuquerque conditions differ. Here are a people, the Mexicans, who have lived in that city for over two hundred years, and the native-born young are less out of proportion. Therefore it would seem that this class, together with the native-born Americans, would, if the development of the disease was influenced by the presence in the city of hundreds of consumptives, show a higher ratio. For the 10-year period the deaths among native-born New Mexicans at Albuquerque were as follows:

	Tuber- culosis deaths.	Deaths from all causes.		Tuber- culosis deaths.	Deaths from all causes.
1904.....	11	96	1910.....	16	129
1905.....	10	93	1911.....	9	129
1906.....	13	92	1912.....	11	110
1907.....	5	103	1913.....	13	110
1908.....	12	124			
1909.....	11	134		111	1,129

This gives us a ratio of 1 to 10.1; in other words, for every 10.1 deaths there was but 1 due to tuberculosis, whereas in the registration area there was 1 out of every 9.1. This, too, among a people largely composed of a class prone to the disease, and where bad housing and insanitary living conditions are common. After making all corrections for age, because necessarily we have counted the young native-born Americans who have a somewhat high rate, does it not seem probable that if the danger of contagion were great this ratio would be vastly different? It proves to be even a much better showing than that of the registration area.

At this point some one may claim that deaths from the disease are rare, recovery ensuing immediately after the development of the

infection, the climatic conditions being such as to favor this course, and that the mortality statistics lead to erroneous conclusions. This is quite the opposite from the truth, for physicians are fairly well agreed that those cases, the initial symptoms of which are manifested in this climate, are apt to be unfavorable as to prognosis. Morbidity statistics are of course more reliable than mortality figures, but unfortunately there are none to be found. In going from place to place the writer visited the majority of physicians, making it a point in every instance to ascertain the number of cases of indigenous tuberculosis which each had observed, the question usually being put in this manner: "How many cases of tuberculosis have you observed, in people other than Mexicans, in which you were of the opinion that the disease developed in this section?" The majority of physicians could not bring to mind such an instance, but occasionally one would recall a patient of this character, at the same time calling upon his colleagues, if such were present, to substantiate the statement. Think of physicians who have practiced many years in a community without ever having observed a case of tuberculosis developing there!

In 1908 Brown made a similar canvas of all the physicians in El Paso engaged in general practice, basing the figures upon mortality. The dean of the profession had been in active work for 27 years, 18 had been residents for over 10 years, and the average of all was $7\frac{1}{2}$ years. Each physician was asked how many deaths he had had in white people, other than Mexicans, from indigenous tuberculosis. Sixty-two physicians responded, and the total number of deaths recorded was 9. And this in a city harboring hundreds of consumptives.

At Colorado Springs Gardiner has for many years kept an accurate record of every case of indigenous tuberculosis. During the last 18 years there have been but 18 cases. Baldwin has shown that even at Saranac, where climatic conditions are entirely different, the disease is far less common than in ordinary communities, and Bonney states that indigenous tuberculosis is rare in Denver, though slightly on the increase.

Several other aspects of the question present themselves. In the East it is not infrequent to observe the development of secondary cases following the onset of the disease in some member of the household. We formerly attributed this to direct infection, though some are raising their voices in contradiction of this at present. Physicians are agreed that in the Southwest secondary cases are of extreme rarity, and that persons who arrive at a resort healthy, although accompanied by a tuberculous member of the family, are quite certain to remain healthy.

Tuberculosis among cattle is also rarer in the Southwest. Range cattle are never infected, but dairy herds, being more confined, are subject to the disease. In 1911 the United States Bureau of Animal Industry tested all dairy cattle in towns of over 500 in New Mexico, finding about 2 per cent infected—a much smaller proportion than in the East. Among native dairy cattle the disease is extremely rare, and is even said not to exist, but here we meet the same difficulty as with human beings—there is very little native stock. Glanders, an infection somewhat similar to tuberculosis, appears to be greatly modified in this region. The disease is far less acute, more difficult to diagnose, easier to eradicate, and secondary cases are less apt to occur.

From the facts presented, what conclusions are we warranted in making regarding the dangers of tuberculosis in the Southwest, and how are the health problems of communities affected by this enormous influx of consumptives? The evidence based upon deaths among the native-born population may be considered of the least value in this particular section, but it remains the ideal method of determining this question, especially in view of our recent knowledge that development ensues years after infection. In such a State as Colorado this method is applicable at present, and 15 years from now will be of far greater value in western Texas and New Mexico, for by that time these States will have many native-born citizens.

The ratio of tuberculosis deaths to deaths from all causes among the native-born residents as determined at Albuquerque, is perhaps next in value. With a population largely composed of a people with a low racial immunity, living unsanitary lives, in a city where a sixth or seventh of the residents are tuberculous, we would expect our ratio to be modified. The main argument against this is that as the tuberculosis rate increases the general rate does likewise—a corollary of what has been observed for years, that as we lower our general death rate by improving hygienic conditions we decrease the tuberculosis rate as well. Therefore this may not constitute altogether sufficient proof of what it was intended to show.

The third method, that of ascertaining whether the disease was already developed upon arrival, is more reliable, but in order to be of most worth the facts should be gathered at the time of death. Such a record is well worth keeping in any resort city, as Gardiner has so ably done at Colorado Springs, and it will go far toward refuting the charge that such cities are hotbeds of infection.

More impressive than any figures presented is the testimony of physicians. When men who have been busy practitioners in a locality for half a lifetime admit that they can count on the fingers of one hand every case of tuberculosis indigenous to their section, we

must acknowledge that such statements are not without worth. While none of these men argue that the disease does not occur, they are all agreed that it is of extreme rarity and that when cases do develop there is a well-defined cause, such as bad housing, improper living conditions, alcoholism, or like debilitating influences.

So far, then, as affecting the health of communities is concerned, this influx of consumptives has had no appreciable effect, and there is not the slightest evidence to show that the hazards of residence in the resort towns studied are a whit greater than in any other community. Quite the contrary in fact is the case, for not only have these towns always had a notoriously low death rate from tuberculosis, a rate which has not in the least been disturbed, but the coming of these very invalids has set a standard of living to be emulated by all, and, as at Saranac, this has served indirectly to still lower that rate. On theoretical grounds the resort towns may be considered hotbeds of infection, but practically they are not so. If our old theories were correct, how could we explain this inconsistency, and does not the very fact that the development of the disease is not more frequent sustain in part our newer ideas regarding infection?

Whether infection in children is more common than in other situations is a different matter and one which will require a long series of post-mortem examinations and clinical tests to settle. Sensitization in the young is a necessary prophylactic measure; without it we would all be lost, but the question may arise whether the doses they receive are not excessive. We are led to believe, however, that infection is less dependent upon the number of bacilli received than upon their pathogenic qualities and the individual resistance. The question assumes a somewhat different aspect with the young than with adults—that is, as far as theory is concerned—but there is not the slightest evidence to show that their nondeveloped immunity has increased the dangers to which they are subjected.

Conjectures as to what restraining influences are at work in the arid region and what factors are responsible for the very limited amount of indigenous tuberculosis have been common. We have already mentioned several conditions, but others are of moment. It is a well-recognized fact that as altitude increases the tuberculosis rate decreases, and some physicians attribute the decrease solely to this cause, differing, however, as to whether such action is exercised through the blood by increasing the erythrocytes and hemoglobin or whether it is a mechanical effect upon the lungs, causing increased respiration, the better use of the alveoli, and improved circulation. Sunshine, the greatest enemy of the tubercle bacillus, must certainly act as a deterrent. We know that the viability of bacilli is affected by a few minutes of direct exposure and that absence of sunshine is a potent factor in house infection. It is a natural conclusion, then,

that a country possessed of the maximum possible amount of sunshine should, other conditions being equal, have a low morbidity, and most observers attach considerable importance to this factor. Some one has suggested that in time the tubercle bacillus may produce a strain much more resistant to actinic rays, and this is indeed a possibility. Absence of moisture is advanced as another cause, but the difference in relative humidity is so little that it is a fair conclusion that bacilli could long since have produced a strain easily adapted to the slightly changed conditions.

While this western country has long been noted as a sanatorium its use as a preventatorium has never received the attention it deserved. It is, indeed, a haven of refuge for the sick, but it should be even more a sheltering place for the well. With our finer methods of diagnosis it is possible for physicians to select those whose susceptibility to tuberculosis is great, and such cases should be referred to this arid region. Already there are instances of frail men gaining in strength after an outdoor life in this section, and returning to the East with many years of usefulness ahead. Members of families which have been decimated by disease have also found this arid belt a place of refuge and a few such have migrated, but the practice is not as extensive as it should be.

Do the facts presented indicate that all of our precautionary measures are unnecessary? Certainly not. The tubercle bacillus remains man's most bitter enemy, an invading host upon which we should wage constant warfare. The first great advance in the control of this dread disease followed the discovery of the bacillus; the next will be the direct result of determining how and why and when infection occurs. We have passed from darkness to the twilight zone of knowledge, but until we come into the full clear light of day the measures we adopt for our protection should include the destruction of this most powerful foe.

Tuberculosis among the Mexicans.

No paper of this character would be complete without some mention of the terrible ravages of tuberculosis among our Mexican population. Whoever is familiar with the situation can not but be impressed with the fearful toll which disease exacts from these primitive people, and their utter helplessness before the onslaughts of this infection. Living as they do in a region which is inimical to the development of this scourge, where climatic conditions are conducive to sanitary living, and where there is little excuse for improper housing, the spectacle is all the more striking.

The Mexican population in the Southwest is composed of two elements. The first are descendants of the early Spanish settlers, the original inhabitants of that territory, and of those who came into

the section years ago. These people have intermarried to some extent with the Indians, but all are native-born residents, with a standard of living much superior to that of recent arrivals. The second element are the Mexicans proper—those who have recently emigrated from Mexico. They are thickly settled along the border, particularly in San Antonio and El Paso, and each year are reaching farther north, some being found in the harvest season in Oklahoma and Kansas. These people are of the peon class, with a large and recent admixture of Indian blood, and a standard of living extremely low. They are intensely ignorant, miserably poor, and altogether a much more primitive people than the first class mentioned.

Thirty years ago tuberculosis was a somewhat uncommon disease among the Mexican population, the older physicians of the Southwest all testifying to this fact. A very careful observer who returned to Chihuahua, the field of his early practice, after an absence of many years, was particularly impressed with the change, and every practitioner refers to the great prevalence of the disease at present in a region where native Americans seem unaffected.

Owing to the incompleteness of the returns, the tuberculosis death rate among the Mexican population of Texas or New Mexico can not be computed. In the two cities, San Antonio and El Paso, which harbor the greatest number, it would apparently be easy to determine what the rate has been, but since 1910 these cities have sheltered hundreds of refugees, which complicates the situation. Moreover, undertakers and physicians, in making out certificates, are prone to record all people of Mexican descent as being of Mexican birth, the first element being indefinite, the second a known number, hence this further distorts our figures. To eliminate the error from refugees we have taken the death rate of 1909, before the influx began, basing our computation upon the census population of 1910. At San Antonio this gives us an annual death rate per 100,000 of 454.2, and at El Paso of 504.1. When it is remembered that the tuberculosis rate for the entire registration area is but 149.5, and that even the negro rate seldom exceeds 350 per 100,000, some idea may be gained of the seriousness of the situation. Based upon the 10-year record, and the Mexican-born population in 1910, the rate is even higher, 609.7 at San Antonio, and 554.5 at El Paso; therefore, allowing for all errors in death certificates, it is seen that we have a frightful mortality. It can safely be stated that none of these deaths are of health seekers, although it is possible that some few persons seek out the cities in order to receive hospital care.

There is some tendency on the part of physicians to attribute this enormous rate to infection derived from health seekers, and, as was previously stated, if this view is accepted, the mortality of the American and Mexican population being classed as one, our entire

figures relating to indigenous tuberculosis will require modification. In the opinion of the writer there is absolutely no connection between the coming of tuberculous invalids and the greatly increased prevalence of the disease among the Mexicans, although, strange to say, they were practically synchronous. The purpose of the following lines is to make this fact plain.

Probably no one contends that the high morbidity we have witnessed among negroes since the Civil War is at all dependent upon the immigration of invalid whites, neither is it believed that the Alaskan Indians, who are particularly isolated, have been so contaminated. The Kaffirs of South Africa exhibit the same tendency to tuberculosis whenever they are crowded into insufficient quarters, and this irrespective of infected whites. Reasoning by analogy, is it not then a fair conclusion that the disease among Mexicans is also independent of the coming of tuberculous invalids? If this were not so, how do we account for its presence with as great a degree of virulence in districts wholly unfrequented by consumptives? The contact between the two races is not intimate, the Mexicans usually living in a separate and distinct part of the city, and while a small number are employed as household servants and a certain amount of laundry work is performed for consumptives, yet the association is never close, being far less than that between negroes and whites. Other reasons for the prevalence of the disease stand out so much more prominently that it is useless for us to continue a search for its etiology in this direction.

The Mexicans are possessed of an extremely low racial immunity, which is probably due to the large admixture of Indian blood. Their resistance has never been developed, because they have never fought the infection through successive generations. Just as in children the susceptibility decreases as age increases, so in races the further removed they are from civilization the more susceptible they are to the disease. The type of the infection clearly proves this, for in each of the races cited the process is diffuse, identical to that witnessed in childhood. The soil is of far greater importance than the seed, and an unestablished immunity more to be considered than the presence of consumptives. If this were not so how do we account for the high mortality among the one class, the Mexicans, and practically none in the other, the Americans? Are they not exposed to the same infection, and are not the contact and association much closer among Americans and health seekers than among Mexicans and health seekers? And yet the one class escapes while the other is decimated.

The fearful ravages of tuberculosis among primitive people has long been noticed. In our own country the negro was the first to show this susceptibility; then followed the Indian, and finally the native Alaskan, but South Africans, Pacific Islanders, and others have suffered from a similar visitation. Whenever infection occurs

among people of these types it shows certain characteristics. The disease is more rapidly fatal, death occurring oftentimes within four or five months, recoveries being exceedingly rare. In the pulmonary type, cavitation is less common, the organism seemingly being unable to resist the encroachments of the disease at any point. Tuberculosis of the glands, joints, and skin, and secondary involvement of other organs, are more apt to occur, and the entire infection runs a far less chronic course than in civilized adults, and is of far greater virulence. As has been said, all this can be explained on the ground that such races have never acquired an immunity and are being visited by primary infections.

The peon class of the Mexican population responds to the infection in just this manner. Recoveries are exceedingly rare, most physicians confessing never to have seen one, and the course is almost invariably progressively downward. A person will be about his work apparently well, suffer from a hemorrhage, and in four months be dead. There is no staying hand; once the infection develops the case is practically hopeless. Cavitation does not occur to any extent, the process being extremely diffuse, and hemorrhages are common. The joint forms, as with the Indians, are frequently observed. Adenitis, as well as anæmia, is prevalent in children. Secondary cases in the same household are the rule, a record of one family being obtained in which 11 members succumbed to the disease. A widow who had had five children, in addressing a letter to the associated charities in San Antonio referred to them as "my deceased children who disappear from me, and I still have a boy I am trying to save."

The second type of Mexican, the class less contaminated by Indian blood, exhibits far more resistance to the disease. At Albuquerque the ratio of tuberculosis deaths to deaths from all causes was 1 to 10.1, an even better showing than the registration area, and this included people largely made up of this class. They are living, however, in a climate where indigenous tuberculosis in other races is almost nonexistent, and undoubtedly if they were obliged to contend with a less salubrious atmosphere, overcrowding, and altered industrial conditions their rate would be higher. Nevertheless, their susceptibility does not begin to compare with that of the others.

In looking further into the etiology of tuberculosis in the peon class one is struck by the frightful housing conditions which prevail, and these are sufficient in themselves to fully explain the high death rate recorded. When one witnesses the inadequacy of the quarters provided, the overcrowding, and the unhygienic lives that these people are forced to lead, it is not necessary to look further for the cause of their trouble and the entire problem is as an open book. Not alone is it sufficient to explain the high tuberculosis rate, but



Illustration No. 1.—Mexican corral, city of San Antonio. Front view. The death rate from tuberculosis among residents of buildings of this character is 609 per 100,000, over four times that of the registration area.

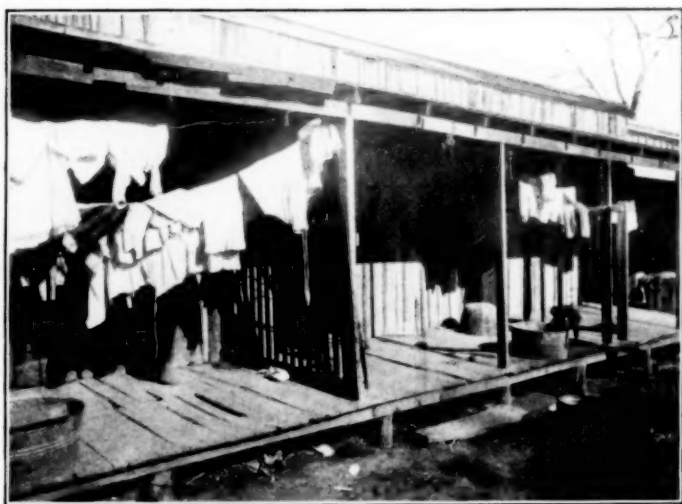


Illustration No. 2.—Mexican corral, city of San Antonio. Front view.



Illustration No. 3.—Toilet belonging to corral shown in illustration No. 1. These three seats, with four others, were all that were available for 86 families consisting of 336 people.



Illustration No. 4.—Tuberculous children of the corrals. The girl in the white dress is healthy, but she is a recent arrival.

the frightful infant mortality and the high mortality from pneumonia and other infectious diseases can also be accounted for.

That any city in the State of Texas, with the possible exception of Galveston, should have a housing problem on its hands is a most striking anomaly. Land is present everywhere; moreover, much of it is useless for any but building purposes, therefore it should be cheap, and with the solving of the transportation problem there is no legitimate excuse for the presence of tenements and rookeries which rival in disgusting qualities those of any eastern city and the congestion which results in buildings of this character. We more or less expect in crowded city districts such conditions as these, but that they should occur in cities of no very great population, where land values ought not to be high, is more difficult to explain.

The Mexicans in the Southwest are principally housed in two varieties of buildings—the adobe, which seldom shelters at the most more than a few families, and often not more than two, and the frame structure, or shack, which may care for 20 or more.

The adobe house is admirably suited to the Southwest. It is warm in winter, and whoever has sought the shelter of its walls can testify that it is cool in summer. Its chief objection is the absence of light and air, but there is no good reason why windows should not be as numerous and large as in other buildings, although as a matter of custom they seldom are. The dirt floors, when present, are apt to be insanitary, but in this climate, where the soil packs hard, they can be kept reasonably clean. If the house becomes dilapidated, or if the owner through an increase in his family, or for other reason, requires more extensive quarters, the structure may be torn down and reconstructed at a minimum expense. Where such a house surrounds a patio, or inclosure, and there is ample provision for light and air and no overcrowding, no reasonable objection to its use can be offered. This type of building exists in El Paso, but overcrowding and congestion are common, the ventilation is insufficient, and sunlight is barred, many of the houses being situated far below the street level. The board of health has recently condemned an entire block of this character and it is their plan to eliminate them.

The frame structures are more typical of San Antonio and are there seen at their worst, constituting a tenement-house problem rivaling that of any congested city. The "houses" are built about a central plaza and are altogether inconspicuous from the street, entrance being afforded by a narrow alley, so that their existence is unknown to those unfamiliar with the byways of those localities, this being the only desirable feature concerning them which was found. Within the plaza or compound are stables, manure, wagons, refuse, toilets, and even rows of similar buildings. The back yard

is usually absent, although in some of the corrals or barracks it does exist, that from which the illustrations were obtained possessing one which measured 31 inches in width.

The "houses" are no more than sheds of one story, and the construction is continuous, so that light and air are cut off from two sides. They are constructed from the cheapest grade of lumber and are hot in summer and cold in winter, while many of them leak. A long piazza, occupied by wood and tubs and other household utensils, is in front, and at regular intervals doors open, with a single window between, the compartments being separated by picket fences. There are usually two rooms to each dwelling, but some have but one. These measure 7 feet in height in front, sloping to 6, or even but 5, in the rear, the floor space varying. In some of the two rooms three families live, the rooms measuring 11 by 10 and 7 by 10 feet, and one shack of this size was found in which 11 people dwelt, while in another, a mere box 9 by 9 feet, there were 3. The only ventilation afforded is by a window in front, with a single sash measuring 20 by 23 inches, and one in the rear, but many of the houses were provided with only a board shutter 2 by 4 feet.

In the corral referred to, which measured 150 by 465 feet, there was provision for 96 families, 86 of the "houses" being occupied by a total of 336 people on the day of our visit, although a previous census showed 385. When it is realized that these are only one-story structures, the congestion is apparent, it being even greater than that of most city tenements, although along different lines. The coming of refugees has had nothing to do with this congestion or the evil conditions, the buildings antedating that time and the surroundings, if anything, having been improved.

The toilets deserve mention. Earth closets were formerly used, but such serious complaints were entered that sewer connections were installed. There were 3 of these, all situated in the center of the compound and unshielded in any manner, with a total of 10 seats. At the time of inspection and for several days after three of these seats could not be used, the doors being nailed. Therefore there were 2 toilets containing 7 seats to be used by 336 people, 1 to every 48 persons. All of these toilets were reeking with filth, accessible to flies, and afforded not the slightest degree of privacy. Whether such conditions as these are conducive to enlightenment, health, or morals the reader may judge.

Within such tenements filth and squalor prevail. One bed is often sufficient for six or eight people, and occasionally one finds none at all. Charcoal pails are used for cooking purposes, only the well to do possessing stoves. There are no facilities for washing other than tubs and pails, the writer being able to find but three water faucets in the entire compound; this for 86 families. What encouragement is

there for keeping clean under such circumstances? The people are, of course, miserably poor. In their efforts to eke out an existence they engage every member of the family in work at home, the principal industry being the shelling of pecans, an occupation in which the very young, the aged, and the sick are employed. A bed quilt, if one is possessed, is spread in the middle of the floor or in the yard, and about this the members of the family gather, consumptives, syphilitics, and infants not being excluded. The nuts have previously been cracked by machinery, but at times this process is incomplete and the workers revert to nature's method, the teeth. The shelled product is kept on the quilt, in receptacles, or even in a corner of the room until such time as enough is accumulated to return to the factory, and it finally reaches the confectioner's window to be gazed at longingly by children of other parts. The preparation of a food product under such conditions as these may not be detrimental to health, but it certainly is not conducive to the consumption of pecans by one who has witnessed the process.

A second corral investigated was somewhat superior in that the houses were provided with attics in order to accommodate a greater number of people. The height of such attics was in no instance more than 4 feet, and yet people were supposed to sleep in such quarters, rooms in which mere boys could not stand erect. In this compound there were 60 shacks of 2 rooms each, and 3 toilets, one to every 20 families. Each of these, however, contained 2 seats, therefore there was 1 seat available for every 10 families. The investment at this place proved interesting, and as the figures came from the owner's lips they may be taken as reliable. The land was purchased seven years ago at a cost of \$1,700, but its valuation is greater at present. The shacks were built out of No. 3 lumber at a total expense, which also includes the cost of labor, of \$1,600, and from this investment of \$3,300 the owner according to his own statement is receiving a monthly income which varies from \$250 to \$280. And yet we wonder why these miserable people who are forced to live in such structures have a tuberculosis death rate of 609.7 per 100,000, and attribute it to the influx of northern visitors.

The unhygienic conditions under which these people live only add to the horror. Their very attempts at healthful living are discouraged, and yet when one sees potted plants in front of these disgraceful shacks, and pictures adorning the walls, it is an indication that they long for something better. But even if they gave no evidence of caring for improved surroundings it would ill befit us to explain our own shortcomings by calling attention to theirs. They are the victims of greed, a greed which in this particular city has been unrestrained. That such frightful housing conditions should occur in one of the principal tourist cities of the country, a city which has

many natural advantages and where there is ample room for all, is all the more to be wondered at.

The accompanying photographs tell better than words that such tenements as these may breed disease and that the enormous infant mortality, the pneumonias, tuberculosis, and other infections, are but effects of well-defined causes. It is a long road from the invalid visitor to the wasted forms of these little tots whose bodies have probably never been without the limits of the corrals in which they were born, and whoever is able to trace infection over such a course must be possessed of a most vivid imagination.

If improper housing conditions and overcrowding upon which we have dwelt are insufficient to explain the prevalence of tuberculosis among the Mexicans, still further reasons may be advanced. The race is very poorly nourished, the majority of the children being thin and anemic, and many of the adults emaciated, the lack of a properly balanced ration doubtless being one of the causes of this. The people are ignorant and superstitious, the most ordinary sanitary precautions even being neglected. Syphilis has become an exceedingly common infection, and its ravages are almost as great as those of tuberculosis. These reasons, together with those which have been noted, would certainly appear to be ample to explain the high tuberculosis rate among these people and to absolve in large measure incoming consumptives from responsibility in the matter.

The Effect upon Economic Conditions.

That the coming of a large number of invalids into this thinly settled region has at least exerted some influence upon economic conditions goes without saying. Whether that influence has been deleterious or beneficial varies with the viewpoint of the individual, and much diversity of opinion exists. We can no more than briefly mention some of the aspects of the question.

A forced immigration is essentially harmful. While those who emigrate to the health belt do so of their own free will in response to certain inducements, it is conceivable that the movement does partake somewhat of the character of a forced immigration, in that these people search out a region where there is no demand for their presence. This being the case, it is possible that some influences may be attributed to this influx of visitors into districts which would under normal conditions accommodate a lesser number of residents. There may be, however, certain features of their coming which compensate for whatever disturbance to the business or industrial life may ensue. The Missouri Commission on Tuberculosis reported to the governor of that State that in a five-year period nearly 1,300 consumptives and 1,400 members of consumptives' families had emigrated from that State, carrying with them money and property

to the value of \$1,414,200, and further added that the total loss to the State could not be estimated. If the departure of these people represented a loss to the State of Missouri it is reasonable to conclude that their coming represented a gain to some other State, although the writer must acknowledge that there is considerable difficulty in identifying the commonwealth which profited thereby, there seemingly being a reluctance on its part to come forward and make acknowledgment.

Without doubt the majority of citizens believe that the movement is harmful. This is particularly true in the larger and rapidly growing towns, communities which are in no sense dependent upon the coming of invalids, but it likewise holds true for many of the smaller settlements. Here are two towns for instance in New Mexico, approximately the same size, with business and industrial conditions identical; in the one it is believed that the interests of the community are advanced by the coming of these strangers, and every effort is made to increase the number, while in the other the movement is entirely discouraged, its chief ambition being to outgrow the reputation as a health resort it has already acquired. It is difficult to explain this diversity of opinion except on the ground that the tendency is to limit the invalid class to particular spots, the second town having decided that it is better off economically in not being a popular center.

The sex of health seekers has much to do with economic conditions. Among a thousand migrants at El Paso 71.5 per cent were males and 28.5 per cent females, this probably being about the prevailing proportion. The preponderance of males can be accounted for on the ground that they are more venturesome and have fewer home ties, but its importance is that they are made up of the working class. Some few females who migrate are also obliged to earn their living, the number of stenographers, school teachers, nurses, and others in ill health who have left their homes having increased in recent years, but for the most part these people are the wives or daughters of wage earners, or else supplied with the necessary funds.

The majority of health seekers come to the Southwest with the idea of obtaining two things, health and work, but they invariably search for the latter before they have even the slightest grasp upon the former. This very fact prevents their employment, and if they are fortunate enough to obtain it, it prevents their recovery. Therefore as far as the consumptive is concerned he will lose whichever way he steps. Work and recovery from or arrest of tuberculosis are thoroughly incompatible, and physicians will testify that those who are obliged to earn their living during the early months of their stay almost invariably decline, and this, too, irrespective of the stage

of the disease they are in. Employers are thoroughly aware of this fact, and if such help is engaged it means that within a few weeks substitutes must be found. Consequently they are reluctant to employ men of this class. Moreover, consumptives are not wanted, as fellow employees object to their presence both from an economic and health standpoint, and trade itself is often affected. The time lost through illness is another factor which has a bearing, and in these days of efficiency the output of the workman is an important consideration. We therefore see in a general way that as far as consumptives themselves are concerned conditions are not favorable for employment. Consequently they have not been as important factors economically as they would be were they recognized as desirable workmen, with keen competition on the part of employers for their labor. In order to impress this point, let us take up the various occupations as they present themselves, examining them more specifically, and ascertaining just what advantages each offers to consumptives and what effect the employment of consumptives has had.

Outdoor life for the invalid is, all other considerations being equal, to be favored; but exposure, hardships, and overexertion are quite apt to overbalance any gain so derived. The number of such positions is relatively few. The largest employers of this class of labor are the railroads, but they aim to employ only healthy men, a physical examination in most instances being required. The work is, of course, much too strenuous for consumptives, and the exposure is too great, except perhaps with gatemen or crossing flagmen. Nevertheless, quite a few invalids do gain employment from this source, particularly as clerks. The street railways offer a limited number of opportunities, but in only two cities of the States covered is there chance for employment in this line. The work is far from ideal—the dust, heat, long hours, and constant standing being decided drawbacks—the motorman's position, if anything, being preferable. For an arrested case a chauffeur's position is fairly desirable, but it should be recalled that the population of the Southwest is limited. Drivers of delivery, laundry, and other wagons are subjected to too great strain, as well as to the inclement weather; hack driving, barring the long hours, is to be preferred, but for some reason consumptives are seldom so employed.

Ranch life is the ideal to which many aspire, "roughing it on a ranch" being synonymous with recovery, and yet if there is a single occupation totally unsuited to the consumptive it is this, the cemeteries being filled with people who had visions of recovering in just this manner. Not only is it theoretically wrong to put either city-bred or untrained men at an occupation of which they know nothing, but the strain is too great physically. Even with the well such a

change taxes one's endurance. Ranch life in the West is also entirely different from farm life in the East, if anything requiring sturdier and hardier men, but neither is suited to the average consumptive, even following the arrest of the disease. The western employer is aware of this fact, and he has not even a harvest season to induce him to employ an invalid. Of the lighter outdoor occupations, what opportunities are presented in the largest town of New Mexico, Albuquerque, with a population of 13,057, over 2,000 of whom are consumptives?

When it comes to indoor occupations even greater difficulties arise, for prejudice is a powerful factor here and few can gain employment unless deceitful means are used. School-teachers and others are obliged to present a certificate from a physician certifying as to health, and no prospective teacher in the East can hope to secure a position unless such certificate is forwarded with her application. Tuberculous students are also barred from the schools and colleges. Clerkships are available, but the indoor life and long hours militate against recovery, and if the subject has the appearance of being tuberculous there is little chance for lucrative work. Office employees, nurses, waiters, and servants are required to be healthy even in families where the disease is present. Manufacturing industries in the Southwest are wholly lacking and the hundred and one occupations which they provide are absent.

A great many invalids undoubtedly do receive employment, and there is probably not an occupation that has not its full quota. Your barber is a consumptive, the ticket agent is an invalid, the merchant, the butcher, the baker, and even the undertaker are all of the same family. Most of them are very careful to hide this fact, sailing under false colors; but it is necessary to be surreptitious in order to make headway. If the appearance of the consumptive is against him, he is almost sure to meet with the greatest difficulty in securing work; but if his face and body give no indication of the presence of the disease and he is willing to fabricate to a certain extent, he may in the course of time be able to secure a position in which he can earn a livelihood. Carnick very aptly summarizes the situation when he states that the most profitable employment that a febrile tuberculous patient can engage in is the methodical systematic employment of rest, and this statement can be broadened to include a vast number who are not febrile. What to do with consumptives who have sufficiently recovered to engage in light work has been a problem in the East for many years; how much more so is it a problem in the West, where work of this character is unavailable and where patients of this type are so numerous.

Coming, now, to a second aspect of the question, whether the employment of such invalids has tended to reduce the price of labor,

there is much room for a difference of opinion. Unquestionably the coming of hundreds of workers to fields where there is little call for their services, under the law of supply and demand has tended to decrease wages, but, as we have just seen, but relatively few are able to secure employment, although their labor is in the market. However, it is not the number employed, but the number seeking employment, which controls the price of labor. Just how great the decrease has been in this instance it is impossible to determine, the Mexican element, who are contenders in the cheap-labor market and who are present in large numbers in the districts covered, adding to the confusion. The following comparative table was presented by a labor leader who was not averse to saying that "between the Mexicans and lungers conditions were frightful." The figures are supposed to be accurate, but in discussing labor conditions misstatements are prone to occur. The first two are nonresort cities. The population of Dallas, Houston, and San Antonio is practically the same; that of El Paso only half as great.

	Dallas.	Houston.	San Antonio.	El Paso.
Carpenters.....	\$4.50	\$4.50	\$3.60	\$5.00
Typographical workers.....	25.00	24.00	22.00	20.00
Bricklayers ¹				
Plasterers ¹				
Plumbers.....	5.50	5.50	4.50	4.50
Electricians.....	4.00	4.00	3.50	3.50
Painters.....	4.00	4.00	3.60	4.00
Paper hangers.....	5.00	5.00	4.00	4.00
Musicians ¹				
Tailors ²				
Sheet-metal workers.....	5.00	5.00	4.00	4.00
Barbers ³				
Bartenders ³				
Hack drivers ³				
Brewery workers ¹				
Bookkeepers ⁴				
Printing pressmen.....	22.00	22.00	20.00	20.00
Clerks ⁴				
Unskilled labor.....	1.75	1.50	1.35	1.25

¹ Same throughout the State.

² Pieceworkers. Scale at San Antonio lowest in State.

³ Do as well in resort cities.

⁴ No fixed scale. Wages lower in the resort cities.

It will be seen that the resort cities have a somewhat lower scale. Other influences, such as organization, an oversupply of labor, or business conditions, are all of greater moment, and it is an unfair deduction that the mere presence of consumptives is responsible for this. The price of unskilled labor at Dallas is fairly high because there are relatively few Mexicans in that city; it is lower still at Houston as a result in an increase in the number, and the lowest at San Antonio and El Paso, where the number is greatest, and the presence of invalids is practically a negligible factor. At one time the wages of carpenters at El Paso were the lowest in the State, and it would have been quite natural for one to attribute this to the con-

sumptives; now they are the highest, for the simple reason that the carpenters are highly organized, there being as many invalids present as ever.

The matter of organized labor has an important bearing, and it must be admitted that it is much more difficult to unionize the members of a working class, a portion of whom consists of the invalid element, than of a class whose workers are healthy, so that indirectly the price of labor may be kept down in this manner. There is another side to this question, for in those trades already organized the consumptive is handicapped by the unions requiring that each applicant for membership shall be tested as to his fitness to perform the necessary labor, this meaning physical as well as technical ability, the union themselves being the judges. Many health seekers have recovered to a sufficient degree to be capable of doing a fair amount of work, and yet are perhaps unable to keep pace with those who are physically strong, their wages being in proportion to what they earn; however, they are debarred from membership, and consequently from remunerative employment.

In one of the cities visited the street railway employees were composed principally of consumptives, labor leaders stating that as high as 80 per cent were men of this class, and the company itself admitting that 60 per cent was not too low an estimate. The unionists were of the opinion that this class was employed in order to prevent the entire force from becoming organized and demanding a higher scale of wages, organization being difficult among men whose very lives depend upon their living in a particular section. On the other hand, the company states that in spite of an increase of wages for length of service they were losing 10 per cent of their employees monthly, and that the men now in service hold their jobs longer, are steadier, temperate, and more satisfactory in many particulars. Occasionally one is laid off on account of illness, but this disadvantage is more than compensated for by the reliability of the men. The company also states that if a man is physically able to perform his duties, and gives every indication of having the interest of the company at heart, they employ him, the fact of his being tuberculous not counting against him. A physical examination is required, but this is more to detect hernia, or other physical conditions which might lead to suits, than for any other purpose. It may be remarked here that this was the only instance the writer found in which consumptives in fair physical condition had an even chance of employment with others, and to that extent it was a pleasing circumstance, for after all we must admit that they are obliged to exist, and they require the necessities of life to an even greater extent than healthy inhabitants. The wages on this particular line compare favorably with those of other cities, 20 cents an hour for motormen and conductors the first six

months, 21 cents the second, increasing to 25 cents the fifth year, with 10 hours of labor.

Summarizing then, we can safely say that in the skilled trades the influx of consumptives has had but little influence upon wages, this being exerted through their reluctance to organize and the fact that they are willing to work on a modified scale if the opportunity presents. In the occupations requiring no training, competition is keener and it is possible that this influence is more appreciable, but in this particular section other factors have already exerted their control, and it is impossible even for invalids to meet the competition which is present. Among the professions there are men of extraordinary ability who, for the sake of their own health, or that of some member of their family, are content to live and work in communities which otherwise could not demand their services, and it is unnecessary to state that the Southwest is the gainer thereby. This is especially true of lawyers, clergymen, and physicians, but business men and others who are invariably leaders in community life must be included. It should be remembered that tuberculosis does not always wholly incapacitate and that it chiefly affects those who are at an age period when they assume the burdens of life; hence they are seldom content, even if their financial condition justifies it, to remain idle. Admitting then that the effect of this health movement has been more than infinitesimal upon labor conditions we can readily see that compensating circumstances are also present.

Regarding the effect upon the communities themselves there should not be a great difference of opinion. There is not a town in that entire western region in which the population has not been materially increased, the business life advanced, and the growth furthered by the coming of these people. Were all the consumptives to leave, the population of El Paso would undoubtedly decrease by over 12,000, Albuquerque would dwindle to half its present size, and Silver City would become a mere spot in the desert. Admitting that the presence of an institution for the treatment of tuberculosis in the residential district of any one of these cities does decrease to a slight extent the value of real estate in the immediate neighborhood, and we are willing to acknowledge that this is the case even in a city where one-sixth of the population is tuberculous, does not the general stimulus which is given to real estate values and the increased business activities and building operations which result from the presence in a city of from 20 to 80 per cent more people than the community would otherwise have more than compensate for such disturbance? The alert business men at least believe so, and they are unwilling to interfere with this movement until their towns have reached a stage of commercial independence, however unpopular the consumptive may be, but a few residents fail to grasp

the situation, evidently believing that the only consumptives are those sprawled on the plaza benches or slowly crawling about the streets of the town. As well ask whether the great work which has brought thousands to Rochester, Minn., has been of benefit to that town as to inquire whether the coming of consumptives has promoted the prosperity of Albuquerque. There can be but one answer to such a question.

Influence of environment upon the disease.

We have considered to some extent various aspects of the health movement, but one other feature presents itself, and that is the effect of the environment upon the disease and whether success is obtained by the health-seeking class; in other words, do they find that which they seek? It is not our intention to compare the results obtained in one section of the country with those of another, or to put forth any statistical data tending to show that a certain percentage of incipient, moderately advanced, or far advanced cases should recover in this or that locality, questions of this sort being almost purely medical, and the literature of the day being already embarrassed by the quantity of data presented, but to indicate in a general way what the essentials for recovery are, whether they obtain in the open resorts, and to what extent they are secured by the average invalid. Fortunately there is but little difference of opinion among medical men regarding the principles of cure, although there may be some variance as to the relative worth of each and the proper time when they are to be applied.

The first and primary requisite is rest. Rest in a medical sense differs from ordinary rest to the same extent that surgical cleanliness differs from the cleanliness of the housewife. It is unquestionably the most important single factor in the treatment of tuberculosis and the one most often abused. Without it recovery in the majority of instances is impossible; with it all things are possible. It marks the great division between affluence and poverty, and it accounts for the view that tuberculosis among the rich is curable, while with the poor it is incurable, only because the wealthy are able to secure it under all circumstances.

Outdoor life is next in importance to rest. By this we mean continuous and uninterrupted life in the open air, and not an occasional walk down the street, sitting on the porch, or sleeping in a well ventilated room. None of these cure tuberculosis, but life in the open, with the breezes blowing about and the flood of sunshine pouring down does cure the disease. It is for this reason more than any other that physicians recommend the resorts where outdoor life is possible the greater portion of the year with the minimum amount of discomfort. Thousands of people annually seek a healthful climate and then fail to take advantage of it when it is within their reach.

The climate is out of doors, the atmosphere within being pretty much the same in one place as another.

Proper nourishment is a third requisite. By this we do not mean the taking into the stomach of an inordinate amount of food, but rather the absorption of a well-balanced ration, one which is sufficient for all needs, and yet which does not throw upon any organ an extra task in the elimination of waste. Just what constitutes a proper ration is a nice question, and one not always for the individual to settle. Gain in weight may or may not be an index, and while it usually indicates that progress is being made, and that the food is of sufficient quantity, such is not always the case. The idea which so many persons have that because it requires 5 pounds more to balance the scales they are that much nearer recovery, is sometimes totally erroneous.

Medical supervision and care should not be omitted from our list. In no other disease is expert medical treatment more necessary than in tuberculosis, a fact too seldom appreciated by the health seekers, especially those with incipient lesions. The regulation of food, digestion, elimination, and exercise, the control of fever, cough, and pain, the prevention of hemorrhage, pleurisy, and other complications, all call for extreme nicety of judgment. The closer this supervision is, and the greater the willingness of the patient to submit to direction, the better are the chances of recovery. Even without the use of a single remedy or adjunct known to medicine this oversight remains essential, and the patient, whatever stage of the disease he is in, should have a guiding hand.

Are the majority of consumptives versed in the requisites necessary to establish a cure? By no means. The average sufferer comes to the West with the sole idea that the climate will cure him, that all he needs to do is to take up his residence in that particular locality, and that nature somehow will perform a miracle. He totally ignores the value of fresh air, apparently never having heard of it; he is unfamiliar with rest in a physiological sense, and he considers that the task of his medical adviser was finished when he directed him to a more favorable climate. He therefore does not obtain the very conditions which will hasten his recovery, simply because he is entirely ignorant of them. Of the relatively few who are cared for in institutions, or those who are under the charge of competent men, this statement can not be made, but not many are of this class. This ignorance is excusable provided the patient shows a willingness to learn, but too often it is apt to continue throughout the invalid's entire residence, to his consequent loss. If every health seeker could be provided with a few months of sanatorium life immediately following his arrival, for the mere purpose of inculcating these principles, the results of climatic treatment would be far better than they are.

Even when patients are informed, there is too often a tendency to ignore the elements necessary for cure; this is inevitable. We can not expect invalids to conform to all the rules of health, but far too many of those who visit the western resorts are oblivious to even the simplest laws. The persistence with which the cure is followed varies not alone with the individual but with the resort as well. In no community in the Southwest, with the possible exception of Silver City, does one witness the enthusiasm and attention to details with which patients follow the cure at Saranac. Whoever has visited that resort carries away with him a lasting impression of the faithfulness with which nearly every sufferer pursues the object in view, even in a climate which entails at least a certain degree of uncomfortableness. While individual instances of this perseverance are common enough in the health belt, especially with those under proper supervision, as a class health seekers are apt to belittle such efforts. One may visit a resort town without discovering any evidence whatever either in the habits of the inhabitants, or their manner of life, that it is a haunt for invalids. One reason for this is that the health seeker does not desire to give any person the impression of invalidism; therefore rather than sleep out of doors he sleeps within, and in preference to a well-regulated life, one which accords with what he knows is necessary to bring about a cure, he selects the opposite. Here again, if it were possible to tag every consumptive so that each could do away with the deception under which he is living, thereby adopting a rational mode of life, our end results would be different.

It is surprising to what extent sufferers neglect to obtain medical advice and treatment. It is safe to say that not over 50 per cent of consumptives are adequately cared for, the remainder seeking treatment only when complications arise or unlooked-for developments occur. One health seeker admitted that after coming into the country his fever continued for 17 months, and yet during that time he never consulted a physician. Such neglect of one's self as this greatly diminishes the chances of recovery. Careful medical attention is fully as essential in the Southwest as in any other region, and every invalid should secure a physician in whom he has confidence and follow his advice throughout his period of residence.

It has been truly said that care without climate is preferable to climate without care, but this remark may be extended to include any one of the essentials mentioned, and if the invalid is obliged to sacrifice rest, life in the open, nourishing food, or medical treatment for the benefits which climatic change will give he has plainly grievously erred. A great proportion of health seekers can not obtain these four necessary conditions to a complete degree, but for that matter they were possibly beyond reach of the invalid before he

migrated, so that it is unsafe to say that every consumptive discovered living under imperfect or unsatisfactory conditions should have remained at home. He may have even bettered his surroundings, but certainly if he has made them no worse he has something of a chance of profiting in the end. This aspect of the question is not often considered by those who deprecate the coming of health seekers, but surely the invalids themselves reason along this line, and we are inclined at times to accept their philosophy.

A word should be added concerning the temperament of patients, for it has much to do with recovery, and should be given more important consideration when recommending treatment. As a rule men stand separation from home ties better than women. They soon adapt themselves to their surroundings, take up the new life with zeal, and are seldom bothered with homesickness. A young girl or boy accustomed to home comforts, who is separated from friends and forced to adopt a life with which there is no sympathy, can hope to secure but little benefit from the change. Those who are resourceful, determined, and unwilling to accept defeat, the very kind whom we look for to be successful in any undertaking, are the ideal migrants.

It is wholly unnecessary to call attention to the fact that the stage of the disease and the resisting powers of the individual are the two important considerations in forecasting the effects of climatic treatment. The sending of far advanced cases, or, what is just as bad, those in which the resisting forces are at the very minimum, to western resorts has been dwelt upon so largely and the warning sounded so many times that further words are superfluous. For one to expect that a mere change of surroundings and atmospheric conditions is sufficient to transform patients with rapidly disintegrating lungs, fever, and other pronounced constitutional symptoms into healthy beings is to expect a miracle. The entire question of climatic treatment hinges here. To indicate the cases which will receive benefit—for after all but a small percentage of those who are transferred are sent with the expectation of recovery, prolongation of life being the idea in view—to select such cases, we say, requires an astute mind, and even then the most brilliant men will err. The health movement, then, can never be one where mistakes and failures are absent and concerning which criticism can not be advanced, but if these errors can be reduced to a minimum and the needless suffering which has ensued diminished much good will have been accomplished.

In closing it may be asked whether it would be advisable to place restrictions upon the health-seeking movement other than those already indicated or to institute measures for its control. This is a mooted question, and one to be decided only after a broad considera-

tion of the entire subject. Two sides of the question present themselves—the public's and the patient's.

On the part of the public the most serious objections to consumptives is on the ground that they endanger the public health. Curiously, but little literature has been advanced, as far as the resorts are concerned, to prove this contention, and likewise that which has been offered to establish the opposite has been fully as scant. On a theoretical basis the public is perhaps justified in their pronouncement, but until they furnish absolute proof of the correctness of their theories, with facts and figures to substantiate them in every detail, such a radical measure as barring consumptives from given districts or the placing of any restrictions upon their coming and going should not be undertaken. We have little respect for the rights and liberties of the individual; the common good is what we must consider, and the privileges which belong to any being may be submerged if the welfare of others is at stake. Particularly is this true in matters of health, and the courts have invariably upheld such doctrine. But the erection of barriers to control the movements of diseased persons, a disease which afflicts one-seventh of all mankind, is a serious step and one not to be taken without a long look into the future. The impracticability of such action is also an argument against it.

The presence of indigents or other undesirable persons in the resorts does not of itself seem sufficient for the institution of restrictive measures, for the problem can unquestionably be settled in a far easier way than this. As yet there has been no united action in the matter, although the calling of the conference by the governor of Texas was a beginning, and it is to be expected that further discussion of the subject will result in plans whereby the resort cities will be freed, partially if not wholly, from the yoke which they are bearing, and this too without interference with the roving of health seekers.

From a humanitarian or ethical standpoint—and this is invariably the viewpoint of myriads of consumptives—restriction is an impossible procedure. The sacrifice of the lives of thousands—and those who are familiar with the situation are well aware that such a sacrifice would be inevitable—is not to be justified without good reasons therefor. It has been clearly proved that there are hundreds who are unable to live their lives in other than an arid region, and doubtless there are many, many times that number who could be saved were they to reside in that land of sunshine. Can we by any right or reason deprive these invalids of the chance of recovery? Is not the value of their lives greater than the small expense which the presence of a few indigents has entailed? At the best we can hope to save but a very few of those who are stricken.

PLAGUE-PREVENTION WORK.

CALIFORNIA.

The following report of plague-prevention work in California for the week ended April 3, 1915, was received from Passed Asst. Surg. Hurley of the United States Public Health Service, in temporary charge of the work:

San Francisco, Cal.

RAT PROOFING.		Old buildings—Continued.	
New buildings:		Cubic feet new foundation walls installed.....	14,002
Inspection of work under construction.....	278	Concrete floors installed (27,577 square feet).....	44
Basement floors concreted (16,572 square feet).....	24	Basements concreted (37,226 square feet).....	56
Floors concreted (16,147 square feet)....	71	Yards and passageways, etc., concreted (36,869 square feet).....	81
Yards, passageways, etc. (17,022 square feet).....	55	Total area concrete laid (square feet).....	101,672
Total area of concrete laid (square feet).....	49,741	Floors rat proofed with wire cloth (7,645 square feet).....	10
Class A, B, and C (fireproof) buildings:		Buildings razed.....	15
Inspections made.....	267	New garbage cans stamped approved..	264
Roof and basement ventilators, etc., screened.....	2,860	Nuisances abated.....	366
Wire screening used (square feet).....	19,770		
Openings around pipes, etc., closed with cement.....	11,030	OPERATIONS ON THE WATER FRONT.	
Sidewalk lens lights replaced.....	3,835	Vessels inspected for rat guards.....	22
Old buildings:		Reinspections made on vessels.....	26
Inspections made.....	600	New rat guards procured.....	6
Wooden floors removed.....	64	Defective rat guards repaired.....	7
Yards and passageways, planking removed.....	24	Vessels on which cargo was inspected.....	1

Amount of cargo inspected and description of same.	Condition.	Rat evidence.
Steamer Congress, from Seattle:		
120 cases milk, cheese, and household goods.....	O. K.....	None.
400 sacks flour, wheat, and peanuts.....	O. K.....	None.

RATS TRAPPED AND EXAMINED FOR PLAGUE.		RATS COLLECTED AND EXAMINED FOR PLAGUE.	
Rats trapped on wharves and water front....	19	Collected.....	280
Rats trapped on vessels.....	12	Examined.....	183
Traps set on wharves and water front.....	191	Found infected.....	
Traps set on vessels.....	45		
Vessels trapped on.....	10	RATS IDENTIFIED.	
Poisons placed on water front (pieces).....	3,600	Mus norvegicus.....	115
Poisons placed within Panama-Pacific International Exposition grounds (pieces).....	3,600	Mus musculus.....	59
Bait used on water front and vessels—bacon (pounds).....	6	Mus alexandrinus.....	64
Amount of bread used in poisoning water front (loaves).....	12	Mus rattus.....	42
Pounds of poison used on water front.....	6		

Squirrels collected and examined for plague.

Contra Costa County.....	83
San Benito County.....	104
Santa Cruz County.....	19
Santa Clara County.....	49
Stanislaus County.....	33
Merced County.....	33
Total.....	321
Found infected.....	0

Other animals collected and examined for plague.

San Benito County.....	1 rabbit
Found infected.....	0

Ranches inspected and hunted over.

Contra Costa County.....	18
San Benito County.....	14
Santa Cruz County.....	5
Stanislaus County.....	6
Merced County.....	10
Santa Clara County.....	9
Total.....	62

Record of plague infection.

Places in California.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number rodents found infected since May, 1907.
Cities:				
San Francisco.....	Jan. 30, 1908	Oct. 23, 1908	(¹)	398 rats.
Oakland.....	Aug. 9, 1911	Dec. 1, 1908	(¹)	126 rats.
Berkeley.....	Aug. 20, 1907	(¹)	(¹)	None.
Los Angeles.....	Aug. 11, 1908	(¹)	Aug. 21, 1908	1 squirrel.
Counties:				
Alameda (exclusive of Oakland and Berkeley).	Sept. 24, 1909	Oct. 17, 1909 ²	Aug. 7, 1914	286 squirrels, 1 wood rat.
Contra Costa.....	May 17, 1914	(¹)	Mar. 4, 1915	1,567 squirrels.
Fresno.....	(¹)	(¹)	Oct. 27, 1911	1 squirrel.
Merced.....	(¹)	(¹)	July 12, 1911	5 squirrels.
Monterey.....	(¹)	(¹)	Apr. 10, 1914	6 squirrels.
San Benito.....	June 4, 1913	(¹)	Sept. 26, 1914	36 squirrels.
San Joaquin.....	Sept. 18, 1911	(¹)	Aug. 26, 1911	18 squirrels.
San Luis Obispo.....	(¹)	(¹)	Jan. 29, 1910	1 squirrel.
Santa Clara.....	Aug. 31, 1910	(¹)	July 23, 1913	25 squirrels.
Santa Cruz.....	(¹)	(¹)	May 17, 1910	3 squirrels.
Stanislaus.....	(¹)	(¹)	June 2, 1911	13 squirrels.

¹ None.² Wood rat.

Operations are being carried on under Federal supervision on the Tormey Estate, Contra Costa County, labor and material being furnished by the owners, as follows:

Number of acres covered.....	149
Number of holes treated.....	6,774

The work is being carried on in the following-named counties: Alameda, Contra Costa, San Francisco, Merced, San Joaquin, Santa Cruz, Stanislaus, San Benito, Santa Clara, and San Mateo.

LOUISIANA—NEW ORLEANS—PLAGUE-ERADICATION WORK.

The following reports of plague-eradication work at New Orleans were received from Surg. Creel, of the United States Public Health Service, in temporary charge of the work:

WEEK ENDED APR. 3, 1915.

OUTGOING QUARANTINE.			
Vessels fumigated with sulphur.....	32	Pounds of potassium cyanide used in hydrocyanic-gas fumigation.....	100½
Vessels fumigated with carbon monoxide.....	20	Pounds of sodium carbonate used in hydrocyanic-gas fumigation.....	181
Vessels fumigated with hydrocyanic gas..	2	Pounds of sulphuric acid used in hydrocyanic-gas fumigation.....	162
Pounds of sulphur used.....	7,972	Clean bills of health issued.....	37
Coke consumed in carbon monoxide fumigation (pounds).....	29,300	Foul bills of health issued.....	7

OVERLAND FREIGHT INSPECTION.

Cars inspected, found in good order, permitted to load.....	1,916
Cars ordered repaired before loading.....	1,318
Total cars inspected.....	3,234

DESTINATION AND NUMBER OF RAILROAD CARS INSPECTED FOR WEEK ENDED APRIL 3, 1915.

Alabama.....	112
Arizona.....	1
Arkansas.....	10
California.....	18
Carolina, North.....	2
Carolina, South.....	4
Colorado.....	40
Florida.....	61
Georgia.....	36
Illinois.....	260
Indiana.....	32
Iowa.....	19
Kansas.....	2
Kentucky.....	47
Louisiana.....	1,089
Maryland.....	1
Michigan.....	32
Mississippi.....	387
Missouri.....	74
New Jersey.....	1
New Mexico.....	3
New York.....	21
Ohio.....	123
Oklahoma.....	22
Oregon.....	5
Pennsylvania.....	15
Tennessee.....	87
Texas.....	244
Virginia.....	3
West Virginia.....	1
Washington.....	2
Wisconsin.....	6
Canada.....	3

FIELD OPERATIONS.

Rats trapped.....	5,144
Number of premises inspected.....	9,854
Notices served.....	955

BUILDINGS RAT-PROOFED.

By elevation.....	155
By marginal concrete wall.....	183
By concrete floor and wall.....	286
By minor repairs.....	400
Square yards of concrete laid.....	10,590
Total buildings rat-proofed.....	1,033
Total buildings rat-proofed to date.....	28,541
Number of abatements.....	2,219
Number of abatements to date.....	15,221

LABORATORY OPERATIONS.

Rodents examined.....	2,438
Mus norvegicus.....	1,855
Mus rattus.....	121
Mus alexandrinus.....	113
Mus musculus.....	2,826
Wood rats.....	68
Muskrats.....	142
Total rodents received at laboratory.....	5,125
Number of suspicious rats.....	2
Plague rats confirmed.....	0
Last case of human plague, Oct. 4, 1914.....	
Last case of rodent plague, Mar. 9, 1915.....	
Total number of rodents captured to Apr. 3.....	312,347
Total number of rodents examined to Apr. 3.....	232,447
Total cases of rodent plague to Apr. 3, by species:	
Mus musculus.....	4
Mus rattus.....	16
Mus norvegicus.....	208
Mus alexandrinus.....	8
Total rodent cases to Apr. 3, 1915.....	236

WEEK ENDED APR. 10, 1915.

OUTGOING QUARANTINE.

Vessels fumigated with sulphur.....	26
Vessels fumigated with carbon monoxide.....	15
Vessels fumigated with hydrocyanic gas.....	1
Pounds of sulphur used.....	6,187
Coke consumed in carbon monoxide fumigation (pounds).....	25,702
Pounds of potassium cyanide used in hydrocyanic gas fumigation.....	102
Pounds of sodium carbonate used in hydrocyanic gas fumigation.....	120
Pounds of sulphuric acid used in hydrocyanic gas fumigation.....	104
Clean bills of health issued.....	30
Foul bills of health issued.....	9

OVERLAND FREIGHT INSPECTION.

Cars inspected, found in good order, permitted to load.....	2,103
Cars ordered repaired before loading.....	1,391
Total cars inspected.....	3,494
Rodents killed in cars.....	3

DESTINATION AND NUMBER OF RAILROAD CARS INSPECTED FOR WEEK ENDED APR. 10, 1915.

Alabama.....	113
Arizona.....	2
Arkansas.....	29
California.....	25
Carolina, North.....	3
Carolina, South.....	6
Colorado.....	5
Dakota, South.....	4
Florida.....	19
Georgia.....	55
Idaho.....	1
Illinois.....	334
Indiana.....	21
Iowa.....	31
Kansas.....	34
Kentucky.....	37
Louisiana.....	939
Massachusetts.....	3
Michigan.....	76
Minnesota.....	14

Mississippi.....	403
Missouri.....	73
Montana.....	1
Nebraska.....	1
New Hampshire.....	1
New Jersey.....	1
New York.....	43
Ohio.....	96
Oklahoma.....	6
Pennsylvania.....	4
Rhode Island.....	1
Tennessee.....	81
Texas.....	162
Virginia.....	3
Wisconsin.....	39
Canada.....	4

FIELD OPERATIONS.

Number of rats trapped.....	5,506
Number of premises inspected.....	11,065
Notices served.....	1,112

BUILDINGS RAT PROOFED.

By elevation.....	136
By marginal concrete wall.....	214
By concrete floor and wall.....	291
By minor repairs.....	487
Square yards of concrete laid.....	15,367
Total buildings rat proofed.....	1,128

Total buildings rat proofed to date.....	29,669
Number of abatements.....	2,742
Number of abatements to date.....	17,963

LABORATORY OPERATIONS.

Rodents examined.....	2,358
Mus norvegicus.....	1,878
Mus rattus.....	104
Mus alexandrinus.....	109
Mus musculus.....	3,246
Wood rats.....	63
Putrid.....	75
Musk rats.....	121
Total rodents received at laboratory.....	5,535
Number of suspicious rats.....	7
Plague rats confirmed.....	0

Last case of human plague, Oct. 4, 1914.

Last case of rodent plague, Mar. 9, 1915.

Total number of rodents captured to Apr. 10. 317,853

Total number of rodents examined to Apr. 10 234,805

Total cases of rodent plague to Apr. 10, by species:

Mus musculus.....	4
Mus rattus.....	16
Mus norvegicus.....	208
Mus alexandrinus.....	8

Total rodent cases to Apr. 10, 1915... 236

WASHINGTON—SEATTLE—PLAGUE-ERADICATION WORK.

The following report of plague-eradication work at Seattle for the week ended April 3, 1915, was received from Surg. Lloyd, of the United States Public Health Service:

RAT PROOFING.

New buildings inspected.....	25
Basements concreted, new buildings, 5,249 square feet.....	6
Floors concreted, new buildings, 17,675 square feet.....	14
Yards, etc., concreted, new buildings, 1,478 square feet.....	2
Sidewalks concreted (square feet).....	16,798
Total concrete laid, new structures (square feet).....	41,191
New buildings elevated.....	5
New premises rat-proofed, concrete.....	20
Buildings razed.....	2

Rodents examined for plague infection.....	365
Rodents proven plague infected.....	0
Poison distributed, pounds.....	28
Bodies examined for plague infection.....	7
Bodies found plague infected.....	0

CLASSIFICATION OF RODENTS.

Mus rattus.....	19
Mus alexandrinus.....	91
Mus norvegicus.....	281
Mus musculus.....	100
Total.....	491

WATER FRONT.

Vessels inspected and histories recorded....	9
Vessels fumigated.....	2
Sulphur used, pounds.....	350
New rat guards installed.....	14
Defective rat guards repaired.....	6
Fumigation certificates issued.....	2
Canal Zone certificates issued.....	1
Port sanitary statements issued.....	34

LABORATORY AND RODENT OPERATIONS.

Dead rodents received.....	13
Rodents trapped and killed.....	478
Total.....	491

The usual day and night patrol was maintained to enforce rat guarding and fending.

MISCELLANEOUS WORK.

Lectures delivered on sanitary subjects.....	1
Rat-proofing notices sent to contractors.....	27
Fishing vessels inspected and medicine chests installed.....	4
Water analysis for the Indian Service.....	1

RODENTS EXAMINED IN EVERETT.

Mus norvegicus trapped.....	49
Mus norvegicus found dead.....	5

Mus musculus trapped.....	2
Total.....	56
Rodents examined for plague infection.....	59
Rodents found plague infected.....	0

RAT-PROOFING OPERATIONS IN EVERETT.

New buildings inspected.....	3
New buildings rat proofed by concrete foundations.....	2

HAWAII—PLAGUE-PREVENTION WORK.

The following reports of plague-prevention work in Hawaii were received from Surg. Trotter, of the United States Public Health Service:

Honolulu.

WEEK ENDED MAR. 27, 1915.

Total rats and mongoose taken.....	473	Classification of rats killed by sulphur dioxide:	
Rats trapped.....	463	Mus alexandrinus.....	2
Mongoose trapped.....	9	Average number of traps set daily.....	1,085
Rats killed by sulphur dioxide.....	2	Cost per rat destroyed.....	17½ cents.
Examined microscopically.....	386	Last case rat plague, Aiea, 9 miles from Honolulu,	
Showing plague infection.....	0	Apr. 12, 1910.	
Classification of rats trapped:		Last case human plague, Honolulu, July 12, 1910.	
Mus alexandrinus.....	230	Last case rat plague, Kalopa stable, Paauhau,	
Mus musculus.....	143	Hawaii, Aug. 29, 1914.	
Mus norvegicus.....	51	Last case human plague, Paauhau Landing,	
Mus rattus.....	38	Hawaii, Aug. 17, 1914.	

Hilo.

WEEK ENDED MAR. 20, 1915.

Rats and mongoose taken.....	2,682	Classification of rats trapped and found	
Rats trapped.....	2,631	dead—Continued.	
Rats found dead.....	1	Mus alexandrinus.....	423
Mongoose taken.....	50	Mus rattus.....	867
Rats and mongoose examined macroscopic-		Mus musculus.....	670
ally.....	2,682	Last case of rat plague, Paauhau Sugar Co., Aug.	
Rats and mongoose found plague infected...	0	29, 1914.	
Classification of rats trapped and found dead:		Last case of human plague, Paauhau Sugar Co.,	
Mus norvegicus.....	672	Aug. 16, 1914.	

PREVALENCE OF DISEASE.

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring.

IN CERTAIN STATES AND CITIES.

CEREBROSPINAL MENINGITIS.

State Reports for March, 1915.

Places.	New cases reported.	Places.	New cases reported.
District of Columbia.....	1	Wisconsin:	
Maryland, exclusive of Baltimore City:		Douglas County.....	4
Allegany County.....		Milwaukee County.....	2
Mapleside.....	1	Price County.....	1
Caroline County.....		Total.....	7
Preston.....	1		
Concord R. F. D.....	1		
Howard County.....			
Ellicott City.....	1		
Total.....	4		

Mississippi Report for February, 1915.

Places.	New cases reported.	Places.	New cases reported.
Mississippi:		Mississippi—Continued.	
Adams County.....	2	Tunica County.....	1
Harrison County.....	1	Warren County.....	1
Sharkey County.....	1	Total.....	7
Sunflower County.....	1		

City Reports for Week Ended Apr. 3, 1915.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Akron, Ohio.....	1	2	New Orleans, La.....		1
Buffalo, N. Y.....	1		Newport, Ky.....	1	1
Chicago, Ill.....	3		Newton, Mass.....		2
Cleveland, Ohio.....	1		Rockford, Ill.....		1
Dayton, Ohio.....	1		Spokane, Wash.....	1	2
Galveston, Tex.....		1	Worcester, Mass.....	1	2

DIPHTHERIA.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1269.

(1261)

ERYSIPELAS.

City Reports for Week Ended Apr. 3, 1915.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Allentown, Pa.	4	.....	Philadelphia, Pa.	20	7
Baltimore, Md.	.....	2	Pittsburgh, Pa.	5	.....
Boston, Mass.	.....	1	Reading, Pa.	4	.....
Buffalo, N. Y.	2	.....	Rutland, Vt.	1	.....
Chicago, Ill.	31	5	Schenectady, N. Y.	.....	1
Cincinnati, Ohio.	3	1	Seattle, Wash.	1	.....
Cleveland, Ohio.	11	.....	South Bethlehem, Pa.	2	.....
Columbus, Ohio.	1	.....	Spokane, Wash.	1	1
Duluth, Minn.	1	.....	Steelton, Pa.	1	.....
Jersey City, N. J.	2	.....	Toledo, Ohio.	1	2
Kalamazoo, Mich.	1	.....	Trenton, N. J.	.....	1
Lancaster, Pa.	3	.....	Yonkers, N. Y.	1	.....
Madison, Wis.	2	.....	York, Pa.	2	.....
Milwaukee, Wis.	3	1			

MALARIA.

State Reports for February, 1915.

Places.	New cases reported.	Places.	New cases reported.
Arkansas.....	123	Mississippi—Continued.	
Mississippi:		Leflore County.....	170
Adams County.....	11	Lincoln County.....	27
Alcorn County.....	25	Lowndes County.....	26
Amite County.....	61	Madison County.....	25
Attala County.....	21	Marion County.....	67
Benton County.....	1	Marshall County.....	24
Bolivar County.....	406	Monroe County.....	38
Calhoun County.....	5	Montgomery County.....	16
Carroll County.....	33	Neshoba County.....	32
Chickasaw County.....	32	Newton County.....	6
Choctaw County.....	59	Noxubee County.....	16
Claiborne County.....	47	Oktibbeha County.....	42
Clarke County.....	24	Panola County.....	81
Clay County.....	11	Pearl River County.....	18
Coahoma County.....	250	Perry County.....	32
Copiah County.....	37	Pike County.....	49
Covington County.....	53	Pontotoc County.....	52
Desoto County.....	16	Prentiss County.....	10
Forrest County.....	117	Quitman County.....	28
Franklin County.....	36	Rankin County.....	25
George County.....	17	Scott County.....	9
Greene County.....	30	Sharkey County.....	32
Grenada County.....	27	Simpson County.....	17
Hancock County.....	23	Smith County.....	19
Harrison County.....	82	Sunflower County.....	341
Hinds County.....	65	Taliahatchie County.....	141
Holmes County.....	213	Tate County.....	80
Itawamba County.....	8	Tippah County.....	34
Jackson County.....	14	Tishomingo County.....	13
Jasper County.....	18	Tunica County.....	68
Jefferson County.....	42	Union County.....	8
Jefferson Davis County.....	23	Walthall County.....	3
Jones County.....	87	Warren County.....	166
Kemper County.....	37	Washington County.....	156
Lafayette County.....	9	Wayne County.....	25
Lamar County.....	25	Wilkinson County.....	2
Lauderdale County.....	54	Winston County.....	24
Lawrence County.....	23	Yalobusha County.....	30
Leake County.....	14	Yazoo County.....	171
Lee County.....	36	Total.....	4,198

MEASLES.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1269.

PELLAGRA.**State Reports for February, 1915.**

Places.	New cases reported.	Places.	New cases reported.
Arkansas.....	8	Mississippi—Continued.	
Mississippi:		Lincoln County.....	5
Adams County.....	8	Madison County.....	1
Alcorn County.....	3	Marion County.....	6
Amite County.....	1	Marshall County.....	6
Attala County.....	2	Monroe County.....	28
Benton County.....	1	Neshoba County.....	9
Bolivar County.....	37	Newton County.....	1
Calhoun County.....	1	Noxubee County.....	5
Carroll County.....	1	Oktibbeha County.....	2
Chickasaw County.....	13	Panola County.....	5
Claiborne County.....	1	Pearl River County.....	1
Clarke County.....	2	Perry County.....	1
Clay County.....	2	Pike County.....	3
Coahoma County.....	16	Pontotoc County.....	1
Copiah County.....	14	Prentiss County.....	1
Covington County.....	6	Quitman County.....	11
Forrest County.....	11	Rankin County.....	2
Franklin County.....	1	Scott County.....	1
George County.....	2	Simpson County.....	2
Grenada County.....	2	Smith County.....	1
Harrison County.....	2	Sunflower County.....	26
Hinds County.....	13	Tallahatchie County.....	9
Holmes County.....	8	Tate County.....	3
Itawamba County.....	4	Tippah County.....	1
Jackson County.....	2	Tishomingo County.....	4
Jasper County.....	3	Tunica County.....	6
Jefferson Davis County.....	1	Union County.....	2
Jones County.....	15	Warren County.....	6
Kemper County.....	4	Washington County.....	7
Lamar County.....	4	Wayne County.....	1
Lauderdale County.....	7	Winston County.....	3
Lawrence County.....	3	Yazoo County.....	4
Lee County.....	9	Total.....	365
Leflore County.....	2		

PNEUMONIA.**City Reports for Week Ended Apr. 3, 1915.**

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Allentown, Pa.....	1	.....	Norfolk, Va.....	3	3
Beaver Falls, Pa.....	1	.....	Palo Alto, Cal.....	1	.....
Binghamton, N. Y.....	8	5	Pasadena, Cal.....	1	.....
Braddock, Pa.....	3	.....	Philadelphia, Pa.....	81	64
Chicago, Ill.....	240	106	Pittsburgh, Pa.....	18	22
Cleveland, Ohio.....	48	23	Reading, Pa.....	4	1
Dayton, Ohio.....	4	3	San Francisco, Cal.....	9	6
Harrisburg, Pa.....	2	1	South Bethlehem, Pa.....	2	.....
Kalamazoo, Mich.....	3	1	South Omaha, Nebr.....	2	.....
Lancaster, Pa.....	1	.....	Steeleton, Pa.....	1	.....
Lima, Ohio.....	1	.....	Toledo, Ohio.....	1	2
New Castle, Pa.....	1	.....		

POLIOMYELITIS (INFANTILE PARALYSIS).**State Reports for March, 1915.**

Places.	New cases reported.	Places.	New cases reported.
Maryland, exclusive of Baltimore City: Queen Annes County— Chester.....	1	New Jersey: Essex County..... Passaic County..... Total.....	1 1 2

Mississippi Report for February, 1915.

Collaborating Epidemiologist Watkins reported that during the month of February, 1915, one case of poliomyelitis was reported in Harrison County, Miss.

RELAPSING FEVER.**Massachusetts—Immigration Station, Boston.**

Assistant Surg. Safford reported the occurrence of a case of relapsing fever in an Albanian immigrant who arrived at the United States immigration station, Boston, Mass., on the steamship *Cretic* April 5, 1915.

SCARLET FEVER.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1269.

SMALLPOX.**California—Otay.**

Surg. Carrington reported by telegraph that during the period from April 10 to 14, 1915, 10 cases of smallpox were notified at Otay, San Diego County, Cal., the infection having been traced to Dixieland, Imperial County, Cal.

Minnesota.

Collaborating Epidemiologist Bracken reported by telegraph that during the week ended April 17, 1915, new foci of smallpox infection were reported through the notification of cases in Minnesota, as follows: Crow Wing County, Deerwood, 1; Jackson County, Des Moines Township, 1; Kandiyohi County, New London Township, 1; Lincoln County, Verdi Township, 4; Nobles County, Worthington, 10; Norman County, Hendrum Township, 1; Renville County, Wang Township, 1; Ericson Township, 1; Rice County, Morristown, 1.

SMALLPOX—Continued.

State Reports for March, 1915.

Places.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Maryland, exclusive of Baltimore City:						
Somerset County—						
Dames quarter.....	1				1	
Crisfield.....	1				1	
Marumso.....	1				1	
Total.....	3				3	
Wisconsin:						
Barron County.....	1			1		
Brown County.....	6					6
Clark County.....	2					2
Columbia County.....	2					2
Dane County.....	17		5	2	5	5
Dodge County.....	27			25		2
Douglas County.....	1					1
Fond du Lac County.....	4				2	2
Iowa County.....	6				5	1
Jefferson County.....	6			1	5	
Juneau County.....	15	1	3		12	
La Crosse County.....	6			3	1	2
Manitowoc County.....	1				1	
Milwaukee County.....	21					21
Monroe County.....	10	1	2	2	6	
Oneida County.....	1				1	
Price County.....	1				1	
Racine County.....	6		2	4		
Richland County.....	1					1
St. Croix County.....	4					4
Sheboygan County.....	4				3	1
Vernon County.....	18				17	1
Walworth County.....	1					1
Waukesha County.....	2					2
Waushara County.....	1				1	
Winnebago County.....	19			3	14	2
Total.....	183	2	12	41	74	56

Miscellaneous State Reports.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Arkansas (Feb. 1-28):			Illinois (Mar. 1-31)—Contd.		
Counties—			Bureau County—		
Ouachita.....	4		Buda.....	5	
Polk.....	10		Cass County.....	3	
Pulaski.....	1		Beardstown.....	4	
St. Francis.....	3		Virginia.....	1	
White.....	1		Champaign County—		
Total.....	19		Champaign.....	7	
District of Columbia (Mar. 1-31).....	1		Christian County—		
Illinois (Feb. 1-28): ¹			Mount Auburn Town-		
Henry County—			ship.....	1	
Keweenaw.....	6		Pana.....	5	
Illinois (Mar. 1-31):			Coles County—		
Adams County—			Humboldt.....	1	
Camp Point.....	5		Franklin County—		
Clayton.....	3		Benton.....	4	
			Gallatin County—		
			Junction.....	1	
			Greene County—		
			Carrollton.....	4	

¹ Supplemental to report published Mar. 26, 1915, p. 935.

SMALLPOX—Continued.

Miscellaneous State Reports—Continued.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Illinois (Mar. 1-31)—Contd.			Mississippi (Feb. 1-28):		
Hamilton County—			Counties—		
Broughton.....	1		Adams.....	3	
Hancock County—			Amite.....	8	
Augusta.....	1		Bolivar.....	4	
Henry County—			Chickasaw.....	14	
Bishop Hill.....	8		Clay.....	8	
Kewanee.....	2		Coahoma.....	31	
Wethersfield.....	3		Grenada.....	1	
Jackson County—			Hinds.....	8	
Campbell Hill.....	4		Holmes.....	124	
Jersey County—			Issaquena.....	8	
Elsah Township.....	2		Jones.....	3	
Knox County—			Lafayette.....	1	
Alton.....	1		Lauderdale.....	1	
Galesburg.....	4		Leflore.....	3	
La Salle County—			Lincoln.....	16	
Streator.....	4		Lowndes.....	2	
Lawrence County—			Madison.....	11	
Russellville.....	4		Marion.....	6	
Livingston County—			Marshall.....	3	
Cardiff.....	1		Monroe.....	38	
McDonough County—			Montgomery.....	1	
Bardolph.....	1		Newton.....	8	
Bushnell.....	2		Panola.....	1	
Macon County—			Pike.....	5	
Decatur.....	1		Scott.....	56	
Decatur Township.....	1		Simpson.....	1	
Madison County—			Smith.....	3	
Alton.....	29		Sunflower.....	21	
Bethalto.....	8		Tunica.....	1	
East Alton.....	3		Union.....	1	
Wood River.....	10		Total.....	391	
Marion County—					
Iuka.....	1		New Jersey (Mar. 1-31):		
Mercer County—			Counties—		
Sherrard.....	1		Camden.....	4	
Morgan County.....	5		Cumberland.....	54	
Peoria County—			Total.....	58	
Peoria.....	2				
Radnos Township.....	2		Wyoming (Jan. 1-31):		
Pike County—			Albany County—		
Barry.....	1		Laramie.....	1	
Richland County—					
Olney.....	1		Wyoming (Feb. 1-28):		
Rock Island County—			Albany County—		
Moline.....	9		Laramie.....	1	
Rock Island.....	3		Big Horn County—		
St. Clair County—			Basin.....	1	
East St. Louis.....	33		Lincoln County—		
Saline County—			Kemmerer.....	9	
Eldorado.....	12		Niobrara County—		
Sangamon County—			Lusk.....	1	
Springfield.....	11		Total.....	12	
Schuyler County—					
Rushville.....	2		Wyoming (Mar. 1-31):		
Rushville Township.....	1		Lincoln County—		
Shelby County—			Cokeville.....	1	
Windsor.....	1		Niobrara County—		
Vermilion County—			Lusk.....	12	
Danville.....	10		Sheridan County—		
Tilton.....	1		Sheridan.....	1	
Whiteside County—			Total.....	14	
Erie.....	2				
Williamson County—					
Herrin.....	1				
Total.....	233				

SMALLPOX—Continued.

City Reports for Week Ended Apr. 3, 1915.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Bellingham, Wash.....	1	.....	Milwaukee, Wis.....	15	13
Brownsville, Tex.....	5	.....	New Orleans, La.....	2	.....
Canton, Ohio.....	10	.....	Newport, Ky.....	2	.....
Cincinnati, Ohio.....	4	.....	Ogden, Utah.....	4	.....
Cleveland, Ohio.....	1	.....	Portland, Oreg.....	3	.....
Danville, Ill.....	1	.....	Quincy, Ill.....	1	.....
Evansville, Ind.....	5	.....	Racine, Wis.....	2	.....
Galveston, Tex.....	2	.....	Richmond, Va.....	1	.....
Kansas City, Kans.....	4	.....	Sioux City, Iowa.....	1	.....
Lima, Ohio.....	1	.....	Spokane, Wash.....	1	.....
Lincoln, Nebr.....	2	.....	Toledo, Ohio.....	1	.....
Madison, Wis.....	1	.....	Washington, D. C.....	1	.....

TUBERCULOSIS.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1269.

TYPHOID FEVER.

State Reports for March, 1915.

Places.	New cases reported.	Places.	New cases reported.
District of Columbia.....	9	Maryland, exclusive of Baltimore City— Continued.	
Maryland, exclusive of Baltimore City:		Washington County—	
Allegany County—		Hagerstown.....	1
Cumberland R. F. D.....	1	Wicomico County—	
Frostburg.....	1	Quantico.....	1
Eckhart.....	1	Salisbury.....	2
Luke.....	1	Fruitland.....	1
Westernport.....	10	Total.....	47
Barton.....	1	New Jersey:	
Lonaconing.....	1	Atlantic County.....	2
Allegany Hospital.....	1	Bergen County.....	4
Baltimore County—		Burlington County.....	2
Morrell Park.....	1	Camden County.....	5
Highlandtown.....	1	Cumberland County.....	2
Glencoe.....	1	Essex County.....	4
Calvert County—		Gloucester County.....	3
Broomes Island.....	1	Hudson County.....	19
Cecil County—		Mercer County.....	1
Chesapeake City R. F. D.....	1	Middlesex County.....	3
Charles County—		Monmouth County.....	2
Nanjemoy.....	1	Morris County.....	1
Dorchester County—		Ocean County.....	2
James.....	1	Passaic County.....	4
Cornersville.....	1	Union County.....	8
Cambridge.....	2	Warren County.....	1
Frederick County—		Total.....	63
Brunswick.....	1	Wisconsin:	
Burkittsville R. F. D.....	1	Barron County.....	3
Harford County—		Bayfield County.....	5
Havre de Grace.....	1	Columbia County.....	2
Howard County—		Forest County.....	2
Ellicott City R. F. D.....	1	Manitowoc County.....	9
Kent County—		Milwaukee County.....	11
Chestertown.....	1	Monroe County.....	1
Massey.....	1	Oconto County.....	1
Prince Georges County—		Portage County.....	2
Piscataway.....	1	Sauk County.....	1
Brentwood.....	1	Sheboygan County.....	1
Laurel.....	1	Trempealeau County.....	1
Queen Annes County—		Walworth County.....	1
Centerville.....	2	Total.....	40
Somerset County—			
Crisfield.....	1		
Talbot County—			
Wittman.....	2		
Easton.....	1		

TYPHOID FEVER—Continued.
State Reports for February, 1915.

Places.	New cases reported.	Places.	New cases reported.
Arkansas:		Mississippi—Continued.	
Bradley County.....	1	Desoto County.....	6
Calhoun County.....	1	Forrest County.....	1
Crittenden County.....	1	Franklin County.....	2
Drew County.....	2	Grenada County.....	2
Faulkner County.....	1	Harrison County.....	5
Franklin County.....	1	Hinds County.....	4
Garland County.....	5	Holmes County.....	11
Howard County.....	3	Jackson County.....	4
Independence County.....	8	Jefferson County.....	2
Izard County.....	2	Jefferson Davis County.....	2
Montgomery County.....	10	Jones County.....	3
Pulaski County.....	1	Kemper County.....	2
Sebastian County.....	1	Lafayette County.....	1
Stone County.....	2	Lamar County.....	1
Washington County.....	9	Lauderdale County.....	1
White County.....	2	Lee County.....	1
Total.....	50	Madison County.....	4
Hawaii:		Marion County.....	9
Hawaii—		Marshall County.....	4
Puna district.....	1	Monroe County.....	1
South Hilo district.....	1	Montgomery County.....	2
Kauai—		Neshoba County.....	1
Koloa district.....	1	Noxubee County.....	5
Waimea district.....	1	Oktibbeha County.....	3
Maui—		Panola County.....	2
Puunene and Kihel district.....	1	Pearl River County.....	2
Oahu—		Pike County.....	5
Honolulu.....	5	Pontotoc County.....	5
Koolauloa district.....	1	Prentiss County.....	3
Total.....	11	Scott County.....	2
Mississippi:		Sunflower County.....	3
Adams County.....	1	Tallahatchie County.....	7
Alcorn County.....	4	Tate County.....	7
Amite County.....	1	Tippah County.....	10
Attala County.....	1	Tishomingo County.....	2
Bolivar County.....	3	Tunica County.....	5
Carroll County.....	4	Union County.....	2
Chickasaw County.....	1	Walsh County.....	2
Choctaw County.....	6	Warren County.....	1
Coahoma County.....	4	Washington County.....	10
Copiah County.....	1	Winston County.....	4
		Yalobusha County.....	1
		Yazoo County.....	8
		Total.....	189

City Reports for Week Ended Apr. 3, 1915.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Alameda, Cal.....	3	.....	Niagara Falls, N. Y.....	1	.....
Ann Arbor, Mich.....	1	.....	Philadelphia, Pa.....	5	1
Baltimore, Md.....	4	2	Pittsburgh, Pa.....	3	.....
Bayonne, N. J.....	1	.....	Plainfield, N. J.....	.....	1
Boston, Mass.....	4	1	Providence, R. I.....	2	.....
Buffalo, N. Y.....	2	.....	Pueblo, Colo.....	1	.....
Chicago, Ill.....	8	.....	Reading, Pa.....	4	.....
Chicopee, Mass.....	1	.....	Rockford, Ill.....	2	.....
Cincinnati, Ohio.....	1	1	Sacramento, Cal.....	1	.....
Cleveland, Ohio.....	4	1	San Francisco, Cal.....	8	2
Columbus, Ohio.....	1	.....	San Juan, P. R.....	.....	1
Danville, Ill.....	.....	1	Schenectady, N. Y.....	4	.....
Dayton, Ohio.....	2	.....	Somerville, Mass.....	1	.....
Fall River, Mass.....	1	.....	Spokane, Wash.....	1	2
Jersey City, N. J.....	1	.....	Springfield, Mass.....	1	.....
Key West, Fla.....	3	.....	Toledo, Ohio.....	4	.....
Lynn, Mass.....	2	1	Washington, D. C.....	5	1
Medford, Mass.....	1	.....	Wilkes-Barre, Pa.....	.....	1
Milwaukee, Wis.....	2	1	Wilkesburg, Pa.....	1	.....
Nashville, Tenn.....	2	.....	Worcester, Mass.....	1	.....
New Haven, Conn.....	1	.....	York, Pa.....	2	.....
New Orleans, La.....	1	.....		

DIPHtheria, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

State Reports for March, 1915.

States.	Cases reported.		
	Diphtheria.	Measles.	Scarlet fever.
District of Columbia.....	24	174	125
Maryland, exclusive of Baltimore city.....	105	79	98
New Jersey.....	697	.....	548
Wisconsin.....	144	131	327

State Reports for February, 1915.

States.	Cases reported.		
	Diphtheria.	Measles.	Scarlet fever.
Arkansas.....	22	102	21
Hawaii.....	22	9	.....
Mississippi.....	50	560	31

City Reports for Week Ended Apr. 3, 1915.

Cities.	Popula- tion as of July 1, 1914 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Over 500,000 inhabitants:										
Baltimore, Md.....	579,590	230	14	4	23	.....	32	1	27	22
Boston, Mass.....	733,802	262	74	7	278	2	153	4	85	24
Chicago, Ill.....	2,393,325	772	130	18	786	7	56	1	290	97
Cleveland, Ohio.....	639,431	176	28	2	110	.....	16	.....	34	22
Philadelphia, Pa.....	1,637,810	572	65	5	430	3	27	1	118	47
Pittsburgh, Pa.....	564,878	176	33	3	128	2	22	.....	18	9
From 300,000 to 500,000 inhabi- tants:										
Buffalo, N. Y.....	454,112	139	24	1	11	.....	20	1	31	12
Cincinnati, Ohio.....	402,175	128	7	1	21	.....	8	.....	39	13
Milwaukee, Wis.....	417,054	121	19	1	5	.....	29	.....	26	.....
Newark, N. J.....	389,106	133	31	1	2	.....	24	.....	26	16
New Orleans, La.....	361,221	160	20	2	14	.....	2	.....	31	20
San Francisco, Cal.....	448,502	127	22	1	42	1	10	.....	41	21
Washington, D. C.....	353,378	154	5	.....	62	.....	34	.....	25	21
From 200,000 to 300,000 inhabi- tants:										
Columbus, Ohio.....	204,567	69	3	1	28	.....	1	.....	4	11
Jersey City, N. J.....	293,921	106	16	1	13	1	18	.....	32	9
Portland, Oreg.....	260,601	39	4	1	3	.....	4	.....	3	2
Providence, R. I.....	245,690	160	9	2	3	.....	11	2	.....	5
Seattle, Wash.....	313,029	58	.....	.....	3	.....	3	.....	8	4
From 100,000 to 200,000 inhabi- tants:										
Cambridge, Mass.....	110,357	36	8	1	24	.....	12	.....	5	5
Camden, N. J.....	102,465	.....	5	.....	41	.....	1	.....	6	.....
Dayton, Ohio.....	123,794	39	3	.....	17	.....	15	.....	3	2
Fall River, Mass.....	125,443	45	3	1	5	.....	10	.....	13	5
Hartford, Conn.....	107,038	63	4	1	1	.....	1	.....	6	2
Lowell, Mass.....	111,094	41	2	1	3	.....	2	.....	6	3
Nashville, Tenn.....	114,899	51	1	.....	1	.....	2	.....	6	8
Reading, Pa.....	103,361	37	3	1	1	.....	7	.....	5	2
Richmond, Va.....	134,917	65	3	.....	.....	.....	5	.....	8	5
Spokane, Wash.....	135,637	.....	.....	.....	1	.....	1	.....	3	3
Springfield, Mass.....	100,375	23	2	.....	16	.....	4	.....	4	.....
Toledo, Ohio.....	184,126	67	4	.....	14	.....	6	.....	45	10
Trenton, N. J.....	106,831	52	2	.....	.....	.....	.....	.....	8	6
Worcester, Mass.....	157,732	68	5	.....	1	.....	2	1	8	.....

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Contd.

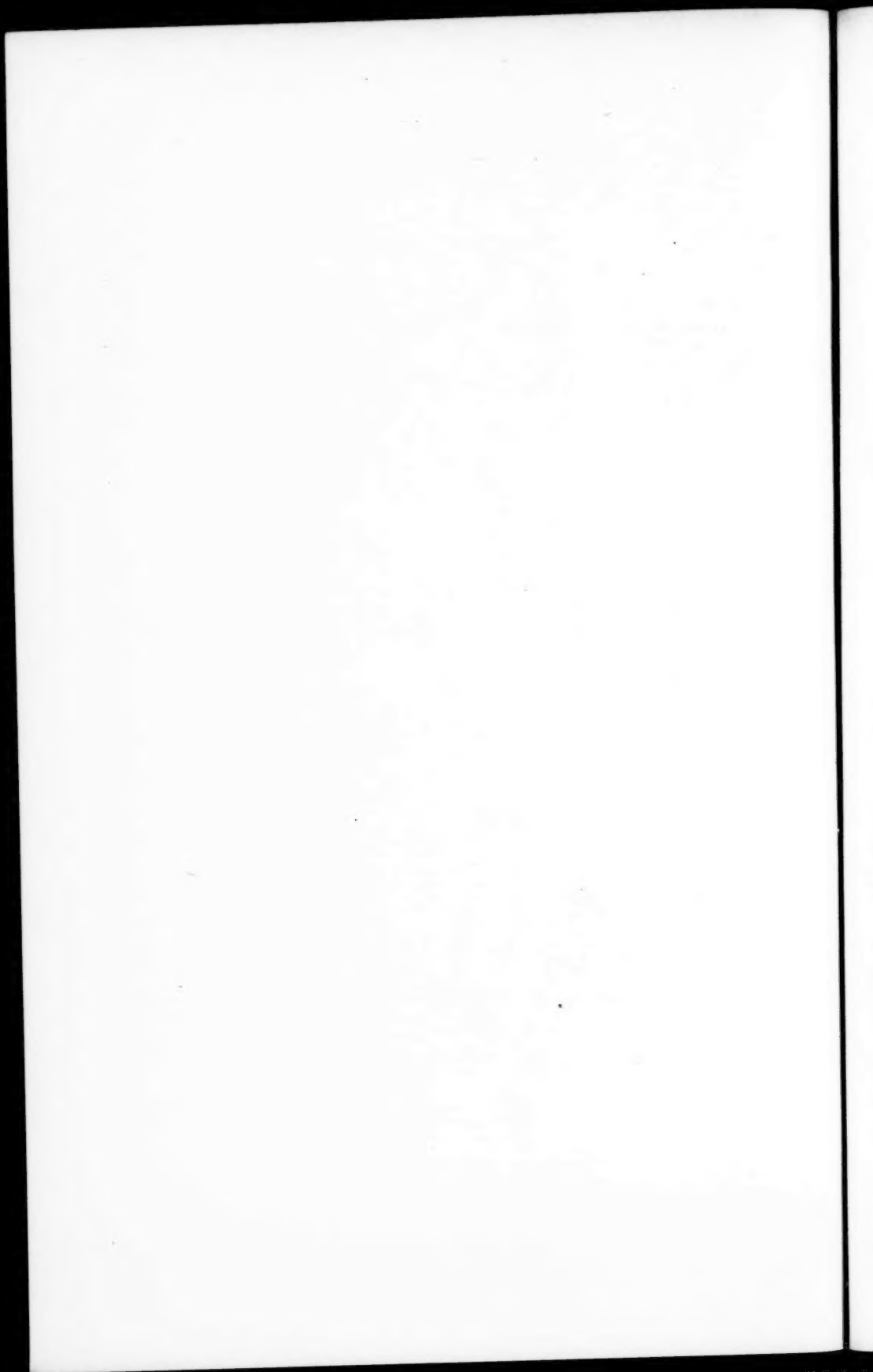
City Reports for Week Ended Apr. 3, 1915—Continued.

Cities.	Popula- tion as of July 1, 1914 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 50,000 to 100,000 inhabi- tants:										
Akron, Ohio.....	80,291	27	3				2		3	1
Allentown, Pa.....	60,297		1		1					
Altoona, Pa.....	56,553	13	2						1	
Atlantic City, N. J.....	53,952	10			9		2		2	
Bayonne, N. J.....	65,271		4		2		2		2	
Berkeley, Cal.....	52,105	6			14				3	
Binghamton, N. Y.....	52,191	29	9	1	1		3		2	2
Canton, Ohio.....	60,043	9					5			
Duluth, Minn.....	89,331		2				11		1	4
Evansville, Ind.....	71,284	15	2		66		2		3	2
Harrisburg, Pa.....	69,493	28								1
Johnstown, Pa.....	64,642	20	3	1	2		1		2	2
Kansas City, Kans.....	94,271		7						2	1
Lynn, Mass.....	98,207	35	3	1	2		6		5	
Mobile, Ala.....	55,573		1				1			1
Norfolk, Va.....	85,540				37		1		6	6
Passaic, N. J.....	66,276	16	5				13		3	1
Pawtucket, R. I.....	56,901		1		1					1
Rockford, Ill.....	52,337	2				4				2
Schneectady, N. Y.....	90,503	21			25	1	3		3	
South Bend, Ind.....	65,114	10	1		3		1			1
Wilkes-Barre, Pa.....	73,660	25	2		5		2		3	
Yonkers, N. Y.....	93,383	16	3		2		2		4	2
From 25,000 to 50,000 inhabitants:										
Alameda, Cal.....	26,330	3	1		3					
Aurora, Ill.....	33,022	11			3					
Chicopee, Mass.....	28,057	9							1	1
Danville, Ill.....	30,847	14					2			1
East Orange, N. J.....	39,852		3				2			
Elgin, Ill.....	27,485				1		1			
Elmira, N. Y.....	37,816		1		18		2			
Everett, Wash.....	32,048	8								2
Fitchburg, Mass.....	40,507	13	3				10	1		
Galveston, Tex.....	40,209	20							3	1
Haverhill, Mass.....	47,071	20	2		20		1		3	2
Kalamazoo, Mich.....	45,842	17							6	3
La Crosse, Wis.....	31,367		1							
Lancaster, Pa.....	49,685		2		2		1			
Lynchburg, Va.....	31,830	16							3	4
Malden, Mass.....	48,979	12			21		3		1	
Medford, Mass.....	25,240	8	1		68			3		
Moline, Ill.....	26,402	4			3					
Newcastle, Pa.....	39,569						3			
Newport, Ky.....	31,517	10					2		2	2
Newport, R. I.....	29,154	7	1				3		1	
Newton, Mass.....	42,455	9	5		8		3		1	
Niagara Falls, N. Y.....	35,127		1	1					12	1
Norristown, Pa.....	30,265	13	2							
Pasadena, Cal.....	40,880	8			32				2	5
Perth Amboy, N. J.....	38,265	7	2		9				2	1
Pittsfield, Mass.....	36,531	13		1	34				2	2
Portsmouth, Va.....	37,569	10			1					1
Racine, Wis.....	44,528	17					1			
Rock Island, Ill.....	29,945	5	1		22		1			
Sacramento, Cal.....	62,717	13			1					1
San Diego, Cal.....	48,900	5	6				1		5	5
South Omaha, Nebr.....	26,368	10								
Superior, Wis.....	44,344	9	1				5			1
Taunton, Mass.....	35,631	26					5		1	1
Waltham, Mass.....	29,688	9	1		1		2		2	
Wheeling, W. Va.....	42,817	17			1		3			
Williamsport, Pa.....	33,181	20	3		14					3
York, Pa.....	40,430								1	
Zanesville, Ohio.....	29,949		2	1						
Less than 25,000 inhabitants:										
Ann Arbor, Mich.....	14,948	11	4				3		6	
Beaver Falls, Pa.....	13,100		1				1			
Braddock, Pa.....	20,935				2					
Cairo, Ill.....	15,392	3								1
Clinton, Mass.....	13,075	4							3	
Coffeyville, Kans.....	15,982				1					

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Contd.

City Reports for Week Ended Apr. 3, 1915—Continued.

Cities.	Popula- tion as of July 1, 1914 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Less than 25,000 inhabitants— Continued.										
Concord, N. H.	22,291	5					3			
Cumberland, Md.	23,846	9			1		2		2	
Grand Haven, Mich.		7					1			2
Harrison, N. J.	16,160						1		2	
Kearny, N. J.	21,967	3							3	1
Key West, Fla.	21,150	7								
Marinette, Wis.	14,610	4					2			
Melrose, Mass.	16,887	6			26		1			
Montclair, N. J.	24,782	5	1				3		3	
Morristown, N. J.	13,653	4								
Muscatine, Iowa	17,674	6							1	
Nanticoke, Pa.	21,756	5			11					
Newburyport, Mass.	15,147	3							1	
New London, Conn.	20,537	3			3					
North Adams, Mass.	22,019	5	1		2					
Northampton, Mass.	19,766	7					1		3	
Palo Alto, Cal.		1								1
Phoenix, Ariz.	16,870	12	3							9
Plainfield, N. J.	22,755	9			17					
Rutland, Vt.	14,417	5								1
South Bethlehem, Pa.	22,840		2						2	
Steelton, Pa.	15,126	6							1	1
Wilkinsburg, Pa.	21,701	3					1		1	
Woburn, Mass.	15,755	7						1		1



FOREIGN REPORTS.

AUSTRIA-HUNGARY.

Cholera.

Cholera has been notified in Austria-Hungary as follows:

Austria.—February 28 to March 6, 1915, 1 case.

Bosnia-Herzegovina.—February 21 to 28, 1915, 3 cases, and from February 14 to 20, 4 cases in the civil population not previously notified.

Croatia-Slavonia.—February 21 to 28, 1915, 1 case, and from February 14 to 21, 25 cases not previously notified.

Hungary.—February 8 to 14, 1915, 8 cases; February 15 to 21, 18 cases.

Typhus Fever.

Typhus fever has been notified in Austria as follows: February 28 to March 6, 1915, 297 cases; March 7 to 13, 1915, 622 cases.

CHINA.

Plague-Infected Rats—Shanghai.

During the two weeks ended March 13, 1915, 489 rats were examined at Shanghai for plague infection. Eight plague-infected rats were found.

CUBA.

Plague—Habana.

A case of plague, occurring in a new focus, was notified at Habana April 17, 1915, and on April 18, 2 cases occurring in the same house in the Vedado district were notified, making a total from February 5, 1915, of 9 cases.

GERMANY.

Typhus Fever.

During the period from March 14 to 20, 1915, 31 cases of typhus fever, occurring mainly among soldiers, were notified in Germany. The disease was reported present during the same period among Russian prisoners in camps in 10 Government districts and in Saxony, Saxe-Coburg-Gotha, and Anhalt.

UNION OF SOUTH AFRICA.

Plague—Cape Province.

During the period from February 5 to March 6, 1915, 18 cases of plague with 10 deaths were notified in the Cape Province. Of these, 10 cases occurred in the Queenstown district, 7 in Tarka district, and 1 in Molteno district.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.**Reports Received During Week Ended Apr. 23, 1915.¹****CHOLERA.**

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Austria.....	Feb. 14-27.....	9		
Bosnia-Herzegovina.....	Feb. 7-20.....	11		
Croatia-Slavonia.....	do.....	46		
Germany.....	Feb. 28-Mar. 3....	5		In prison camps.
India:				
Madras.....	do.....	3	1	
Madura district.....	Feb. 21-Mar. 6....	251	137	
Indo-China:				
Cochin China—				
Saigon.....	Feb. 8-28.....	185	92	
Siam:				
Bangkok.....	Jan. 23-Feb. 20....		2	

YELLOW FEVER.

Ecuador:				
Guayaquil.....	Feb. 1-28.....	2	2	

PLAGUE.

Cuba:				
Habana.....	Apr. 17-18.....	3		
Dutch East Indies:				
Java.....	Jan. 29-Feb. 11....	576	504	East Java.
Surabaya.....	Feb. 21-27.....	12	12	
Ecuador:				
Guayaquil.....	Feb. 1-28.....	40	18	
Greece:				
Saloniki.....	Apr. 9.....	12		
India:				
Bombay.....	Feb. 21-Mar. 6....	22	20	
Karachi.....	Feb. 28-Mar. 6....	6	2	
Madras Presidency.....	Feb. 21-Mar. 6....	182	132	
Indo-China:				
Cochin China—				
Saigon.....	Feb. 8-21.....	10	7	
Siam:				
Bangkok.....	Jan. 23-Feb. 20....		7	
Straits Settlements:				
Singapore.....	Jan. 23-Feb. 20....	12	7	
Turkey in Asia:				
Bagdad.....	Feb. 7-20.....	113	82	

SMALLPOX.

Austria-Hungary:				
Austria.....	Feb. 28-Mar. 6....	292		
Brazil:				
Rio de Janeiro.....	Feb. 21-Mar. 6....	44	13	
Canada:				
Manitoba—				
Winnipeg.....	Mar. 29-Apr. 3....	4		
Ontario.....				Total, Mar. 1-31, 97 cases.
Hamilton.....	Mar. 1-31.....	2		
Toronto.....	Mar. 29-Apr. 10....	3		
Quebec—				
Montreal.....	Apr. 4-10.....	3		
China:				
Foochow.....	Mar. 6.....			Present.
Hongkong.....	Feb. 28-Mar. 13....	5	5	Chinese.
Dutch East Indies:				
Java.....	Feb. 28-Mar. 6....	101	37	Western part.
Egypt:				
Alexandria.....	Mar. 5-11.....	5		
Cairo.....	Feb. 19-Mar. 4....	7	1	

¹ From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received During Week Ended Apr. 23, 1915—Continued.****SMALLPOX—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay.....	Feb. 21-Mar. 6....	59	16	
Karachi.....	Feb. 28-Mar. 6....	1	1	
Madras.....	do.....	21	1	
Indo-China:				
Cochin China—				
Saigon.....	Feb. 22-28.....	2	2	
Italy:				
Turin.....	Mar. 15-21.....	1		
Mexico:				
Aguascalientes.....	Mar. 30-Apr. 4....		2	
Chihuahua.....	Apr. 3-9.....	5	4	
Monterey.....	Mar. 22-28.....	7		
Vera Cruz.....	Mar. 21-27.....	23	9	
Russia:				
Odessa.....	Feb. 21-Mar. 13....	13	1	
Petrograd.....	Feb. 21-27.....	87	19	
Riga.....	Feb. 21-Mar. 6....	25		
Vladivostok.....	Mar. 2-8.....	1		Total, Dec. 1-31: 47 cases, 23 deaths.
Spain:				
Barcelona.....	Mar. 5-25.....		22	
Seville.....	Feb. 1-28.....		3	
Valencia.....	Mar. 14-27.....	145	9	
Straits Settlements:				
Singapore.....	Jan. 31-Feb. 20....	1	2	
Switzerland:				
Basel.....	Feb. 28-Mar. 13....	2		
Turkey in Asia:				
Beirut.....	Mar. 7-20.....	14	6	

Reports Received from Dec. 26, 1914, to Apr. 16, 1915.**CHOLERA.**

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Austria.....				Total Sept. 15-Dec. 5: Cases, 3,467; deaths, 937. Total Jan. 4-Feb. 13: 138 cases.
Do.....				Total Nov. 18-Dec. 22: Cases, 741; deaths, 133.
Bohemia.....				Total Sept. 23-Dec. 5: Cases, 176; deaths, 56.
Coast land—				
Trieste.....	Nov. 15-21.....	5		
Galacia.....				Total Sept. 23-Dec. 5: Cases, 2,047; deaths, 793.
Kracow.....	Oct. 4-Dec. 5....	199	4	
Lisko.....	Sept. 23-Nov. 7....	355	181	
Przemysl.....	Nov. 1-14.....	132	3	
Lower Austria.....				Total Sept. 1-Dec. 5: Cases, 473; deaths, 67.
Vienna.....	Sept. 1-Jan. 30....	390	42	
Moravia.....				Total Sept. 15-Dec. 5: Cases, 362; deaths, 93.
Brunn.....	Sept. 15-Nov. 21....	18	3	
Silesia.....				Total Sept. 23-Dec. 5: Cases, 288; deaths, 39.
Styria.....				Sept. 23-28: Cases, 55; deaths, 18.
Gratz.....	Oct. 3-Nov. 14....	10		
Upper Austria.....	Oct. 4-Nov. 7....	3		
Bosnia-Herzegovina.....	Jan. 4-Feb. 6....	99	60	
Croatia-Slavonia.....	Dec. 31-Jan. 31....	427	160	Total Oct. 4-10: Case, 1.
Hungary.....	Dec. 31-Feb. 7....	498	157	Total Oct. 4-10: Case, 1; death, 1.
Do.....				Total Sept. 15-Nov. 30: Cases, 3,024; deaths not yet reported.
Budapest.....	Dec. 25-Feb. 13....	22	4	Total Nov. 18-Dec. 22: Cases, 452; deaths not reported.
Fiume.....	Jan. 25-Feb. 7....	3	1	
Ceylon:				
Colombo.....	Sept. 5.....	1	1	
China:				
Nanking.....	Nov. 15-21.....			Present.
Wuchow.....	Nov. 27.....			Do.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from Dec. 26, 1914, to Apr. 16, 1915—Continued.****CHOLERA—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Dutch East Indies:				
Banca—				
Muntok.....	Dec. 6-12.....	11	7	
Celebes—				
Menado.....	Oct. 18-Dec. 5....	425	409	
Java—				
Batavia.....	Oct. 25-Dec. 26....	361	343	
Sumatra—				
Lampung.....	Nov. 8-14.....	27	7	
Mengals.....	Oct. 18-Nov. 7....	65	69	
Palembang.....	Oct. 18-Dec. 19....	175	147	
Pencoulon district.....	Oct. 25-31.....	88	32	
Telok Betong.....	Nov. 14-Dec. 12....	47	44	
Germany.....				Total Nov. 8-Jan. 16: Cases, 54.
Do.....	Feb. 21-27.....	12	1	In two prison camps.
Brandenburg.....	Dec. 6-23.....	4		Vicinity of Frankfort on the Oder.
Torgau.....	Jan. 5-16.....	1		At Birnbaum.
Posen.....	Dec. 20-26.....	2		
Zirka.....	Jan. 5-16.....	5		
Silesia.....	Nov. 8-Dec. 26....	46		In 23 localities.
Rosenberg.....	Jan. 5-16.....	1		
India:				
Bombay.....	Nov. 1-Jan. 9....	9	3	
Calcutta.....	Nov. 1-28.....		42	Oct. 25-31: Deaths, 17. Not previously reported.
Madras.....	Nov. 8-Feb. 20....	172	124	
Madura district.....	Jan. 17-Feb. 20....	371	266	
Rangoon.....	Sept. 1-Dec. 31....	6	5	
Indo-China.....				Jan. 1-Aug. 31: Cases, 259; deaths, 148. Aug. 1-31: Cases, 18; deaths, 15.
Anam—				
Binh-Dinh.....	Oct. 1-Nov. 30....	84	42	
Cambodia—				
Pnum Penh.....	Aug. 1-Oct. 31....	2	1	
Cochin China—				
Baria.....	Aug. 1-31.....	6	6	And vicinity, Nov. 3-23: Cases, 20; deaths, 10.
Cantho.....	Oct. 1-31.....	2		
Cholon.....	Aug. 1-Nov. 30....	70	49	Total Jan. 1-Dec. 20: Cases, 154; deaths, 79.
Saigon.....	Aug. 1-Feb. 7....	405	247	
Laos—				
Pakse.....	Aug. 1-31.....	1	1	
Tonkin—				
Ninh-Binh.....	Oct. 1-31.....	11	2	
Japan.....				Total Jan. 1-Dec. 31: 5 cases, 4 deaths.
Kyoto fu.....	Oct. 1-31.....	1	1	
Philippine Islands:				
Manila.....	Oct. 25-Jan. 30....	66	37	
Do.....	Feb. 7-27.....	16	10	
Russia:				
Moscow.....	Nov. 8-Jan. 23....		4	
Siam:				
Bangkok.....	Sept. 27-Nov. 28....		8	
Straits Settlements:				
Singapore.....	Oct. 4-Jan. 30....	5	5	

YELLOW FEVER.

Brazil:				
Bahia.....	Jan. 24-Feb. 20....	3	1	
Rio de Janeiro.....	Dec. 13-26.....	2	1	
Ecuador:				
Gayaquil.....	Nov. 1-30.....	1		
French Guiana:				
St. Jean du Maroni.....	Sept. 23-Oct. 10....	15	8	At the penal station.
Venezuela:				
Caracas.....	Dec. 31.....	1		

PLAGUE.

Bahrein (in Persian Gulf).....	Dec. 29.....			Present.
Brazil:				
Bahia.....	Nov. 16-Feb. 27....	20	16	
Pernambuco.....	Oct. 11-Dec. 31....		12	
Rio de Janeiro.....	Dec. 20-Jan. 5....	2		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 26, 1914, to Apr. 16, 1915—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Ceylon:				
Colombo.....	Oct. 25-Feb. 20....	64	60	
China:				
Canton.....				June 12-July 12: Cases, 325.
Hongkong.....	Dec. 28-Feb. 24....	2	1	Chinese.
Shanghai.....	Dec. 6-Jan. 2.....		3	Among natives.
Cuba:				
Habana.....	Feb. 9-Apr. 14....	6	5	
Pinar del Rio..	Apr. 9-10.....	2	1	
Dutch East Indies:				
Provinces.....				Total, Oct. 1-Nov. 30: Cases,
Kediri.....	Oct. 1-Nov. 30....	730	678	2,562; deaths, 2,278.
Madien.....	do.....	128	110	
Paseroean.....	do.....	1,405	1,211	
Surabaya.....	do.....	299	279	
Do.....	Dec. 13-Feb. 13....	132	120	
Ecuador:				
Duran.....	Nov. 1-Jan. 31....	10	4	
Guayaquil.....	do.....	310	119	
Milagro.....	Dec. 1-31.....	1	1	
Sanborondon.....	Nov. 1-Dec. 31....	4	3	
Egypt.....				Total, Jan. 1, 1914-Jan. 28, 1915:
Alexandria.....	Nov. 5-28.....	1	1	Cases, 225; deaths, 116.
Assiout.....	Jan. 28.....	5		
Port Said.....	Oct. 22-Dec. 21....	9	7	Jan. 1-Dec. 18: Cases, 44.
Greece.....				Sept. 12, present in Drama and
Piraeus.....	Jan. 17-27.....	1		Kavala.
India:				
Bassein.....	Jan. 4-Dec. 5.....	13	10	Not previously reported.
Bombay.....	Nov. 1-Feb. 20....	31	23	
Karachi.....	Nov. 8-Feb. 20....	19	15	
Madras.....	Nov. 22-Dec. 12....	6	6	
Madras Presidency.....	Jan. 17-30.....	299	211	
Do.....	Feb. 7-20.....	263	191	
Rangoon.....	Sept. 1-Dec. 31....	125	117	
Indo-China.....				Jan. 1-Aug. 31: Cases, 1,780;
				deaths, 1,413. Aug. 1-3:
				Cases, 155; deaths, 121.
Anam—				
Phanitet.....	Aug. 1-31.....	4	1	
Phanrang.....	Aug. 1-Nov. 30....	12	10	
Phanri.....	Oct. 1-Nov. 30....	2	1	
Cambodia—				
Kompong-Speu.....	Nov. 1-30.....	5	3	
Pnum Penh.....	Aug. 1-Nov. 30....	88	84	
Stung-Treng.....	Oct. 1-Nov. 30....	4	3	
Cochin China—				
Cantho.....	Nov. 1-30.....	3		
Cholon.....	Aug. 1-Nov. 30....	39	11	
Giadinh.....	Oct. 1-31.....	1		
Saigon.....	Aug. 1-31.....	23	15	And vicinity Nov. 3-30: Cases, 5.
Do.....	Jan. 4-Feb. 7.....	29	12	
Thudaumot.....	Nov. 1-30.....	2	1	
Kouang-Techou-Wan.....	Aug. 1-Nov. 30....	70	70	
Tonkin—				
Tong-San.....	Nov. 1-30.....	25	25	
Japan.....				Total, Jan. 1-Dec. 31: 485 cases;
				110 deaths.
Chiba-ken—				
Komikawa.....	Jan. 1-Dec. 31, 1914.	6	6	
Moriyama.....	do.....	5	4	
Ibaraki-ken—				
Isahaya.....	do.....	1	1	
Kagi.....	Jan. 24-Mar. 6....	16	15	
Kanagawa-ken—				
Hodogaya.....	Jan. 24-Feb. 13....	8	6	Including reports previously
Kawasaki.....	do.....	1	1	published in P. H. R.
Ohno-mura.....	do.....	9	8	
Tijima-mura.....	do.....	5	4	
Yokohama.....	do.....	1	1	Do.
Taiwan (Formosa).....	do.....	303	275	Do.
Tokyo-fu.....	do.....	47	29	Do.
Tokyo.....	Dec. 29-Jan. 4....	1	1	
Libya (Tripoli).....				Present in Derna and Marsa-
				Susa among native laborers.
Mauritius.....	Nov. 6-Jan. 14....	74		
Persia:				
Belessavar.....	Oct. 30-Nov. 9....	80	80	On Caspian coast.
Kasri Shireen.....	Dec. 12.....	1		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 26, 1914, to Apr. 16, 1915—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Peru:				
Departments—				
Ancachs.....				Total year 1914: Cases, 34; deaths, 20.
Arequipa.....				Total year 1914: Cases, 54; deaths, 24.
Cajamarca.....				Total year 1914: Cases, 16; deaths, 7.
Calho.....				Total year 1914: Cases, 14; deaths, 8.
La Libertad.....				Total year 1914: Cases, 335; deaths, 176.
Lambayeque.....				Total year 1914: Cases, 107; deaths, 47.
Lima.....				Total year 1914: Cases, 106; deaths, 48.
Piura.....				Total year 1914: Cases, 94; deaths, 56.
Callao.....	Nov. 16-Jan. 31...	8	2	
Catacoas.....	do.....	35	3	
Chiclayo.....	do.....	30	15	
Chocope.....	Nov. 16-Jan. 31...	6		Present.
Ferrenafe.....	Nov. 16-Jan. 31...	1		
Guadaloupe.....	Jan. 4-31.....	1	1	
Huancayo.....	do.....	1	1	
Lambayeque.....	Nov. 16-Jan. 31...	14	5	
Lima (city).....	do.....	16	2	
Lima (country).....	do.....	9	1	
Mollendo.....	do.....	20		
Pacasmayo.....	Nov. 16-Jan. 31...	1		
Piura.....	Nov. 16-Jan. 31...	24	7	
Salaverry.....	Nov. 16-Jan. 31...	4		
San Pedro.....	Nov. 16-Jan. 31...	23		
Trujillo.....	do.....	55	8	
Russia:				
Moscow.....	Dec. 6-Feb. 13....	9	2	
Senegal:				
Dakar.....	Dec. 5.....			Do.
Siam:				
Bangkok.....	Dec. 26-Jan. 23....		5	
Straits Settlements:				
Singapore.....	Nov. 1-Jan. 30....	13	11	
Turkey in Asia:				
Bagdad.....	Nov. 1-Dec. 3.....	11	9	
Do.....	Dec. 23-Jan. 5.....	12	8	
Do.....	Jan. 12-Mar. 2.....	121	11	
Union of South Africa:				
Queenstown.....	Feb. 5.....			Do.
Zanzibar.....	Oct. 25-31.....	2	3	

SMALLPOX.

Arabia:				
Aden.....	Nov. 5-Feb. 17....	23	25	
Muttra.....	Feb. 7-13.....			Present.
Argentina:				
Rosario.....	Oct. 1-31.....		1	
Australia:				
New South Wales—				
Newcastle.....	Jan. 22-28.....	2		
Penrith.....	Dec. 11-17.....	1		
Sydney.....	Dec. 11-Feb. 25....	35		Total Nov. 13-19: Cases, 7 in the metropolitan area and 2 in the country districts.
Queensland—				
Brisbane.....				Nov. 19, in Colmslie quarantine station, 1 case from s. s. Kano Na from Melbourne, via Sydney.
South Australia:				
Austria-Hungary:				
Austria—				
Prague.....	Jan. 17-23.....	1		
Vienna.....	Oct. 31-Jan. 9.....	141	15	
Do.....	Jan. 17-30.....	211	56	
Hungary—				
Budapest.....	Jan. 31-Feb. 27....	177		
Fiume.....	Dec. 6-Feb. 7.....	4	2	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 26, 1914, to Apr. 16, 1915—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Pernambuco.....	Oct. 1-Dec. 31.....	.....	57	
Rio de Janeiro.....	Nov. 1-Jan. 9.....	735	215	
Do.....	Feb. 7-20.....	39	14	
Sao Paulo.....	Nov. 9-15.....	2	.....
Bulgaria:				
Sofia.....	June 30-Nov. 28....	121	2	
Canada:				
British Columbia—				
Vancouver.....	Feb. 8-Mar. 20.....	4	.....
Manitoba—				
Winnipeg.....	Jan. 24-Mar. 27....	4	.....
Ontario—				
Hamilton.....	Jan. 1-Feb. 28.....	5	.....
Sarnia.....	Dec. 13-Feb. 6.....	5	.....
Toronto.....	Dec. 6-Mar. 20.....	48	1	
Windsor.....	Jan. 17-Feb. 27....	4	.....	Jan. 13: Cases, 4 from Grand Trunk ferryboat Landsdowne.
Quebec—				
Montreal.....	Dec. 28-Apr. 3.....	10	.....
Quebec.....	Dec. 13-Jan. 16....	3	.....
Canary Islands:				
Teneriffe—				
Santa Cruz.....	Dec. 6-26.....	.....	2	
Ceylon:				
Colombo.....	Oct. 25-Feb. 20....	168	48	
China:				
Foochow.....	Feb. 27.....	.....	.....	Present.
Hankow.....	Feb. 7-13.....	1	.....
Hongkong.....	Nov. 22-Feb. 27....	6	3	
Nanking.....	.....	.....	.....	Feb. 20, present.
Newchwang.....	.....	.....	.....	Do.
Shanghai.....	Nov. 9-Feb. 27....	36	86	Deaths among natives.
Tientsin.....	Dec. 6-12.....	.....	1	
Cuba:				
Guayos.....	Jan. 12-Feb. 10....	7	1	
Habana.....	Mar. 8-21.....	1	1	Mar. 15: 1 case on steamship Morro Castle.
Dutch East Indies:				
Borneo.....	Nov. 8-14.....	50	30	Oct. 18-24: Cases, 112; deaths, 44, mainly in Pontianak.
Java.....	Jan. 8-Feb. 20.....	485	171	In the western part, including Batavia.
Batavia.....	Oct. 18-Nov. 21....	166	44	
Do.....	Jan. 8-Feb. 20.....	90	30	
Surabaya.....	Nov. 1-7.....	1	.....
Sumatra—				
Tepanodi district.....	Dec. 5-29.....	6	2	
Egypt:				
Alexandria.....	Nov. 19-Feb. 25....	101	27	
Cairo.....	Dec. 3-Feb. 18.....	23	5	
France:				
Havre.....	Dec. 20-26.....	1	.....
Marseille.....	Jan. 1-Feb. 28.....	.....	1	
Paris.....	Nov. 15-Dec. 26....	4	2	
Germany				Nov. 15-Dec. 19: Cases, 14. Jan 10-16: 11 cases.
Great Britain:				
Cardiff.....	Nov. 30-Dec. 5.....	5	.....
Liverpool.....	Dec. 19.....	1	.....
London.....	Jan. 31-Mar. 20....	24	3	
Germany:				
Strassburg.....	Jan. 1-31.....	4	1	
Greece:				
Kavala.....	Nov. 22-Mar. 13....	10	.....
Kilkish.....	Nov. 22-Feb. 27....	1	.....
Patras.....	Nov. 23-Feb. 21....	.....	18	Jan. 31: Epidemic.
Saloniki.....	Nov. 15-Mar. 13....	81	63	
Guatemala:				
Guatemala.....	Mar. 21-27.....	.....	.....	Present.
India:				
Bombay.....	Nov. 1-Feb. 20.....	170	48	
Calcutta.....	Oct. 25-Nov. 28....	.....	37	
Karachi.....	Jan. 3-Feb. 6.....	3	1	
Madras.....	Nov. 1-Feb. 20.....	59	9	
Rangoon.....	Oct. 1-Dec. 31....	3	3	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 26, 1914, to Apr. 16, 1915—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Indo-China:				
Annam—				
Binh-Dinh.....	Oct. 1-31.....	3		
Phanrang.....	Nov. 1-30.....		1	
Cambodia—				
Phnompenh.....	Oct. 1-Nov. 30....	2	1	
Cochin China—				
Bac-Lien.....	Nov. 1-30.....	1		
Laos—				
Pakse.....	do.....	1		
Tonkin—				
Haiduong.....	do.....	4		
Haiphong.....	Oct. 1-Nov. 30....	13	1	
Hanoi.....	Nov. 1-30.....	1		
Italy:				
Milan.....	Dec. 1-31.....	1		
Turin.....	Dec. 21-Jan. 10...	4		
Japan.....				Jan. 1-Dec. 31: Cases, 485; deaths, 110, exclusive of Taiwan.
Kagi.....	Jan. 31-Feb. 6....	3	3	
Nagasaki.....	Jan. 18-Mar. 14...	4	1	
Nagasaki-ken.....	Oct. 1-Dec. 31....	60	12	
Taiwan.....	Oct. 25-Feb. 28....	21	4	
Mexico:				
Aguascalientes.....	Dec. 7-Feb. 28....		20	
Chihuahua.....	Nov. 30-Feb. 15...	24	15	
Juarez.....	Dec. 4.....			Prevalent.
Mazatlan.....	Dec. 9-Feb. 23....	37	22	
Mexicali.....	Feb. 14-20.....	3		
Monterey.....	Dec. 14-Mar. 16...	60	2	Feb. 10: Epidemic.
Nuevo Laredo.....	Jan. 31-Apr. 3....	5	4	
Salina Cruz.....	Nov. 1-7.....	1		
Tampico.....	Dec. 1-Mar. 20....		25	Prevalent among the military.
Vera Cruz.....	do.....	134	99	
Netherlands:				
Rotterdam.....	Jan. 24-Mar. 6....	5	1	
Newfoundland:				
St. Johns.....	Jan. 23-29.....	1		
Norway:				
Christiansand.....	Nov. 1-30.....	7	2	Including report, vol. 29.
Stavanger.....	Nov. 30-Dec. 5....	1		
Persia:				
Teheran.....	Feb. 14-20.....			Present.
Peru:				
Arequipa.....	Feb. 28.....			Epidemic.
Philippine Islands:				
Manila.....	Dec. 20-26.....	2		From steamship Ixion.
Portugal:				
Lisbon.....	Nov. 22-Mar. 6....	25		
Russia:				
Moscow.....	Nov. 8-Feb. 13....	131	30	
Odessa.....	Oct. 25-Nov. 18...	10	1	
Do.....	Nov. 30-Jan. 30...	98	12	
Petrograd.....	Oct. 25-Feb. 20....	569	142	
Riga.....	Oct. 11-Feb. 20....	104		
Santo Domingo:				
Santo Domingo.....	Feb. 1-15.....		2	
Spain:				
Barcelona.....	Nov. 22-Feb. 18...		44	
Madrid.....	Nov. 1-Feb. 28....	5	10	
Seville.....	Dec. 1-Jan. 31....		4	
Valencia.....	Nov. 15-Mar. 13...	822	38	
Straits Settlements:				
Singapore.....	Oct. 10-Jan. 30....	17	5	
Sweden:				
Stockholm.....	Dec. 13-19.....		1	
Switzerland:				
Basel.....	Nov. 7-Feb. 27....	55		
Turkey in Asia:				
Beirut.....	Nov. 1-Mar. 6....	104	32	
Haifa.....	Nov. 2-Dec. 6....	14	6	
Jaffa.....	Jan. 10-30.....	3		
Jerusalem.....	Oct. 1-Nov. 30....	5		
Tripoli.....	Dec. 27-Jan. 9....	8		
Zanzibar.....	Nov. 14-21.....		7	

SANITARY LEGISLATION.

STATE LAWS AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

NEW YORK.

Vaccination of School Children Required—Reports Relating Thereto to be Made by Physicians. (Chap. 133, Act Mar. 30, 1915.)

SECTION 1. Sections 310 and 311 of chapter 49 of the laws of 1909, entitled, "An act in relation to the public health, constituting chapter 45 of the consolidated laws," are hereby amended to read, respectively, as follows:

SEC. 310. *Vaccination of school children.*—1. A child or person not vaccinated shall not be admitted or received into a school in a city of the first or second class. The board, officers, or other person having the charge, management, or control of such school shall cause this provision of law to be enforced. The board of health or other board, commission, or officers of such city having jurisdiction of the enforcement of the chapter therein shall provide, at the expense of the city, for the vaccination of all pupils of such school whose parents or guardian do not provide vaccination for them.

2. Whenever smallpox exists in any other city or school district, or in the vicinity thereof, and the State commissioner of health shall certify in writing to the school authorities in charge of any school or schools in such city or district, it shall become the duty of such school authorities to exclude from such schools every child or person who does not furnish a certificate from a duly licensed physician to the effect that he has successfully vaccinated such child or person with vaccine virus in the usual manner or that such child or person shows evidence by scar of a successful previous vaccination. Whenever school authorities having the charge, management, and control of schools in a district or city cause this provision of law to be enforced, the local board of health shall provide for the vaccination of all children whose parents or guardian do not provide such vaccination.

3. The expense incurred, when such vaccination is performed under the direction of the local health authorities, shall be a charge upon the municipality in which the child or person vaccinated resided, and shall be audited and paid in the same manner as other expenses incurred by such municipality are audited and paid. The local boards of health or other health authorities may, in their discretion, provide for the payment of additional compensation to health officers performing such vaccination.

SEC. 311. *Vaccination, how made; reports.*—1. No person shall perform vaccination for the prevention of smallpox who is not a regularly licensed physician under the laws of the State. Vaccination shall be performed in such manner only as shall be prescribed by the State commissioner of health.

2. No physician shall use vaccine virus for the prevention of smallpox unless such vaccine virus is produced under license issued by the Secretary of the Treasury of the United States and is accompanied by a certificate of approval by the State commissioner of health, and such vaccine virus shall then be used only within the period of time specified in such approval.

3. Every physician performing a vaccination shall within 10 days make a report to the State commissioner of health upon a form furnished by such commissioner setting forth the full name and age of the person vaccinated and, if such person is a minor, the name and address of his parents, the date of vaccination, the date of previous vaccination if possible, the name of the maker of the vaccine virus and the lot or batch number of such vaccine virus.

Health Officers, Local—Residence of. (Chap. 124, Act Mar. 24, 1915.)

Section 20 of chapter 49 of the laws of 1909, as amended by chapter 559 of the laws of 1913, has been amended by striking out the words "but unless he shall, he must reside in an adjoining town."

The section which was amended appeared in the Public Health Reports, October 3, 1913, at page 2084, and the clause which has been stricken out appears on the third and fourth lines from the bottom of that page.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

CHICAGO, ILL.

Department of Health—Impersonation of Officers of, and Counterfeiting of Stars, Buttons, etc., of, Prohibited. (Ord. Mar. 22, 1915.)

SECTION 1. That the Chicago code of 1911 be and the same is hereby amended by adding to article 1, chapter 38, the following sections:

1171a. *Impersonating an officer of the department of health.*—Any person who shall falsely assume or pretend to be an officer, inspector, or member of the department of health of this city, or who shall, without being a member of the department of health, wear in public the uniform adopted and used by said department, or wear and use the badge, star, or buttons used by the department of health, or any similar in appearance, or who shall, without being lawfully entitled to have in his possession as a member of the department of health a star or badge of authority, produce or display the same and thereby obtain free passage upon any public conveyance within the city, shall be fined not less than \$10 nor more than \$100 for each offense.

1171b. *Counterfeiting department star, buttons, etc.*—Any person who shall counterfeit or imitate, or cause to be counterfeited or imitated, or who shall use or wear any star, badge, button, or device adopted and used by the department of health without authority so to do from the commissioner of health shall be fined not less than \$10 nor more than \$100 for each offense.

Wood Alcohol—Sale of Preparations and Mixtures Containing. (Ord. Mar. 29, 1915.)

SECTION 1. No person, firm, or corporation shall have, sell, or offer for sale any food or drink which contains methyl alcohol (commonly known as wood alcohol), or any preparation or mixture of any kind whatsoever containing methyl alcohol, intended for internal use by man.

Any preparation or mixture containing methyl alcohol intended for external use by man, or so used, shall, when offered for sale, sold, or used, be conspicuously labeled "Wood alcohol" or "This preparation contains wood alcohol" and the word *poison*, together with a skull and crossbones. The word *poison* and the skull and crossbones shall be printed in red ink and shall be at least one-quarter of an inch in height.

SEC. 2. Any person, firm, or corporation who shall violate the requirements of this ordinance shall be fined not less than \$5 nor more than \$100 for each offense.

Street Cars—Cleaning of. (Ord. Mar. 8, 1915.)

SECTION 1. That section 2210 of the Chicago code of 1911 as amended May 5, 1913 (council journal, p. 279), and as further amended December 28, 1914 (council journal, pp. 2648 and 2649), be, and the same is hereby, amended by striking out paragraph (g)¹ (council journal, Dec. 28, 1914, right-hand column, p. 2648), and substituting the following as paragraph (g) in lieu thereof:

2210. (g) The interior and platforms and inside of vestibules of all cars shall be kept clean, and cars in which smoking is permitted shall be cleaned after each round trip. All window glass of all cars shall be kept clear at all times when such cars are in operation.

¹ Public Health Reports, Feb. 12, 1915, p. 512.

DAYTON, OHIO.

Nurses—Employment of. (Ord. 9842, Mar. 17, 1915.)

SECTION 1. That two additional nurses be employed in the bureau of medical service, welfare department, for such length of time as the city manager may deem advisable.

SEC. 2. That the salaries of each nurse shall be \$65 per month and shall be paid as other nurse salaries are paid out of the funds heretofore appropriated for the bureau of medical service, welfare department.

EVERETT, WASH.

Plague—Prevention of—Rat Proofing of Buildings. (Ord. 1645, Mar. 16, 1915.)

SECTION 1. No permit shall be issued by the building inspector of the city of Everett for the construction, reconstruction, alteration, or repair of any building or structure within the city unless provision shall be made in the plans for such building or structure for the proper rat-proofing of the same as in this ordinance provided: *Provided*, That the provisions of this ordinance shall not apply to buildings used exclusively as garages.

SEC. 2. Any building or structure hereafter erected which shall not be raised at least 18 inches above the level of the ground at all points shall be required to have its foundation walls of concrete or of brick or stone laid in cement or mortar or some other material which shall be of equal value for rat-proofing; they shall not be less than 8 inches thick, and if of concrete they shall not be less than 6 inches thick. Such walls shall extend around the entire area to be occupied by the building or structure and shall extend not less than 18 inches below the surface of the ground. The full floor area under such buildings must be covered by concrete not less than 3 inches thick. If it is proposed to place flooring over any concrete floor area and not in direct contact therewith, such flooring shall be double, with wire netting of such form and quality as may be required by the building inspector, between the two layers, and any such double floor shall be constructed throughout of tongued-and-grooved lumber, and the wire netting above specified shall be extended upon the walls not less than 18 inches: *Provided*, That if there is no dead space between the wooden floor and the concrete layer, such flooring may consist of a single layer.

SEC. 3. No permit shall be granted by the building inspector for the reconstruction, alteration, or repair of any building or structure unless provisions shall be made in the plans therefor for the proper rat proofing of such building or structure in substantial compliance with the provisions of this ordinance as set forth in section 2 hereof, when, in the judgment of the building inspector, it is practical, desirable, or necessary that such rat proofing be done, but in no event shall such reconstruction, repair, or alteration be permitted without full compliance with all the provisions of this ordinance where the cost and expense of such reconstruction, alteration, or repair shall, in the opinion of the building inspector, equal or exceed 40 per cent of the value of the structure sought to be reconstructed, altered, or repaired.

SEC. 4. All ordinances or parts thereof, in so far as they may be in conflict herewith, are repealed.

SEC. 5. Any person found guilty of a violation of the provisions of this ordinance shall be deemed guilty of a misdemeanor, and on conviction fined in any sum not exceeding \$100, or imprisoned in the city jail for a term not exceeding 30 days, or may be both fined and imprisoned.

IRONWOOD, MICH.

Milk and Cream—Production, Care, and Sale. (Ord. Feb. 9, 1915.)

SECTION 1. No person, firm, corporation, or driver of any milk wagon, nor any servant or agent of any vender of milk, shall sell or offer for sale, expose for sale, dispose of, exchange or deliver, or with the intent so to do as aforesaid have in his, her, or their possession, care, custody, or control, milk or cream for human food without having been first licensed so to do.

Every person, firm, or corporation selling or disposing of milk or cream shall annually on the 31st day of May, pay a license fee as follows: Every milk or cream vender selling, offering for sale, exposing for sale, exchange or deliver, or disposing of milk or cream or either of them in or from any store, stand, booth or market place, milk depot, warehouse, dairy cow, stable or building or establishment of any kind, or in or from any wagon, carriage, or other vehicle, shall pay the sum of \$3; excepting as hereinafter provided. When persons residing within the incorporate limits of the city are keeping one cow, known as the family cow and wish to sell milk in excess of family consumption from this one animal, and have complied with all other provisions of this article, a license to sell milk must be granted for this purpose and the usual license fee shall be omitted.

All licenses granted in pursuance with this article may at any time be revoked by the mayor for violations of the provisions of this ordinance, or for any other good and sufficient cause.

Application—Separate license required for each place of business—Change of location.—

SEC. 2. Any person or corporation desiring to be licensed as a milk vender in accordance with and pursuant to the provisions of this article shall make application in writing therefor to the health officer. Such application shall be made on printed form supplied by the health officer, and such applicant shall state therein his full name and residence, also location of place at which it is desired to carry on such business, the number of wagons to be used, if any, and name and location of dairy or dairies which will supply the milk, number of cows in each herd, and estimated amount of milk these are expected to produce daily.

The health officer, upon receipt of the application properly filled out and signed, shall investigate, or cause to be investigated, the place of business, wagons, utensils, dairy, or stables and cow or herds from which the milk is produced, and if conditions are found to be sanitary and in compliance with the laws of the State of Michigan, ordinances, rules, and regulations of the city of Ironwood, he shall transmit such application to the mayor with his approval thereon, and the mayor thereupon shall issue, or cause to be issued, a license to such applicant upon payment by him to the city treasurer the license fee as herein provided, a license attested by the city clerk authorizing such applicant to carry on and conduct the business of vending milk in the city during the period for which such license is issued.

If any person, firm, or corporation licensed under the provision of this article shall change the location of his, her, or its place of business, notice of such change shall be given forthwith to the health officer, and no business shall be conducted or carried on under such license at such new location until such notice shall have been given as herein provided.

Name and license number to be placed on vehicles.—SEC. 3. Each vender of milk before engaging in the sale of milk or cream must cause his name and license number to be placed and to remain in letters and figures not less than 3 inches high on each outer side of all wagons or vehicles used by such vender in conveyance or sale of milk.

Sealed cans required for shipping milk or cream into the city.—SEC. 4. No person or corporation shall deliver or bring into the city for sale in bulk any milk or cream unless such milk or cream which is contained in a can or receptacle is sealed with a

metal seal by the shipper thereof, and unless such can or receptacle shall have such seal intact at the time it is brought into the city.

Name of bottler to appear upon cap of bottle.—SEC. 5. It shall be unlawful for any person, firm, or corporation to sell or offer for sale within the city of Ironwood milk or cream in a bottle unless such bottle shall have printed upon the cap thereof, in a conspicuous manner, the name of the person, firm, or corporation bottling said milk or cream.

Milk and cream in stores or from vehicles to be sold only in bottles.—SEC. 6. No person, firm, or corporation shall sell or offer for sale, or expose for sale or keep with the intention of selling, any milk or cream in stores or in other places where other merchandise other than milk and cream is sold, or from hand, cart, or vehicle on the street, unless the milk or cream is kept, offered for sale, exposed for sale, or sealed in tightly closed and capped bottles or such receptacles as will be approved by the health officer of the city of Ironwood.

Skimmed-milk cans to be marked—Mixtures prohibited.—SEC. 7. No person or corporation licensed under the provision of this article shall sell or offer for sale in this city milk from which cream or any part thereof has been taken, unless such milk shall be offered for sale or sold by such person or corporation as skimmed milk, and no person or corporation shall have in his or its possession, charge, or control with intent to sell, offer for sale, or deliver any such milk unless the cans or receptacles containing such milk shall have painted on the outside of each can or receptacle, 6 inches from the top, in red letters not less than 4 inches high, the words "skimmed milk." Mixture of any two of the following articles for human food: Milk, buttermilk, condensed milk, skimmed milk, cream or separated milk by any person or corporation licensed under this article is prohibited.

Power of entry for inspection and taking of samples.—SEC. 8. It shall be the duty of the health officer or his authorized representative or representatives and he shall at all times and at such times as he deems necessary to visit and inspect all places and vehicles in which milk or cream is sold or offered for sale, exposed for sale, stored, kept, exchanged, delivered, or disposed of, as well as to inspect, view, and examine all vessels, cans, receptacles, refrigerators, or compartments of any store or building or places of any kind containing milk or cream and to examine the condition thereof with reference to cleanliness and sanitation, and cause the removal of or abatement of any unclean or injurious condition. Any person failing to obey or hinder the health officer or his representative in this connection shall be punished by the penalty of this section.

The health officer or his representative, during time of inspection as hereinbefore stated in this section, shall have the right to take a sample of milk or cream from each milk can, vessel, or container which he may find in any such place, such samples not to exceed one-fourth of a pint each, for the purpose of testing, inspecting, or analyzing such sample. The health officer shall inform the person the purpose of the sample and shall, upon demand, pay such person for said sample.

Milk standard fixed.—SEC. 9. No person, firm, or corporation licensed under this article shall keep, sell, or offer for sale, convey or deliver or have in his or its possession any milk in the city if such milk contains more than 88 per cent of water fluid or less than 12 per cent of total solids, or less than 3.5 of butter fat, or containing more than 50,000 bacteria per cubic centimeter, or of a temperature above 55° F.

Cream standard fixed.—SEC. 10. No person, firm, or corporation shall keep, sell, or offer for sale, convey or deliver or have in his possession, charge or control any cream in the city if such cream contains less than 18 per cent butter fat or more than 50,000 bacteria to each cubic centimeter of cream, or of a temperature above 55° F.

Parturition of cow—Restriction as to sale of milk.—SEC. 11. No person or corporation shall offer or keep for sale milk or cream drawn from any cow within 15 days before or one week after parturition of such cow. Nor shall any person or corporation cause

or permit any milk or cream drawn from any cow within either of the periods named to be mixed with any other milk or cream.

Sick or diseased cow milk to be destroyed—Sale forbidden.—SEC. 12. If any cow be sick or diseased, the owner or person in charge thereof shall not sell, offer for sale, or expose for sale the milk or cream therefrom, but shall at once destroy such milk or cream.

Impure, diluted, or adulterated milk—Sale forbidden.—SEC. 13. No person by himself or by his servant or agent, or as servant, agent, or employee of any other person or corporation, shall sell or offer for sale, exchange or deliver or transport, or shall have in his custody, possession, or control, with intent to sell, offer for sale, exchange or deliver in the city any milk or cream or skimmed milk for human food which is unclean, diluted, impure, unwholesome, adulterated, or with water or any substitute added, or not the standard provided for by this article, or milk or cream produced from sick or diseased cows, or cows kept in an unclean or filthy condition, or cows fed on refuse, or slops from distillers, breweries, mesh, refuse or that which has been contaminated from any human being or animal sick with any contagious or infectious disease.

Impure milk to be confiscated.—SEC. 14. All milk or cream found in violation of this article as designated in section 13, shall, upon discovery thereof be confiscated, forfeited, and immediately destroyed by or under the direction of the health officer or any officer detailed for that purpose.

Tuberculin test.—SEC. 15. No milk, cream, buttermilk, or ice cream shall be sold, offered for sale, exposed for sale, or kept with the intention of selling within the city of Ironwood unless such milk or cream or the milk or cream contained in buttermilk or skimmed milk or ice cream be obtained from cows that have given satisfactory negative tuberculin test within one year, the cow having been tested shall be marked "tuberculin tested" and shall be numbered, and a certificate shall be filed with the health officer of the city of Ironwood upon forms furnished by the health officer giving the number of and a brief description of the animal, the date of the taking of said test, and the name of the owner. Said certificate shall be signed by such person making such test. Said tester and method of testing each animal for tuberculosis must be approved by the commissioner of food for the State of Michigan and the health officer of the city of Ironwood.

Penalty.—SEC. 16. Any person, firm, or corporation who violates, disobeys, omits, neglects, or refuses to comply with or who resists the enforcement of any of the provisions of this ordinance, or who refuses or neglects to obey any rule, order, or sanitary regulation made by the health officer under the authority of this article, shall be fined not less than \$10 nor more than \$100 and the cost of prosecution, and in the imposition of such fine and cost the court makes a further sentence that the offender be imprisoned in the county jail of Gogebic County or the city jail of the city of Ironwood until payment thereof, provided, however, that the charge of such imprisonment shall not exceed 90 days.

**RULES AND REGULATIONS WHICH MUST BE OBSERVED BY FARMERS AND DAIRYMEN
IN THE CARE OF COWS AND HANDLING OF MILK SHIPPED TO OR SOLD IN THE CITY
OF IRONWOOD.**

The cows.—1. The cows must be kept clean.

2. Long hair must be clipped from tail and udder.

3. The teats and udders must be washed and dried with a clean cloth immediately before milking.

4. Manure or dirt must not be permitted to remain upon the belly, flanks, or tail while being milked.

5. Cow must be tested for tuberculosis within one year and free from disease.

Stables.—1. Cow stables must be well lighted and ventilated.

2. Floors must be tight and well drained.

3. Manure must be removed from stalls and gutters at least twice daily. This must not be done during milking or within one hour prior thereto.

4. Walls and ceiling must be kept clean.

5. Stables must be whitewashed twice a year.

6. The ceiling must be so constructed that dust and dirt therefrom shall not readily fall to the floor or in the milk.

The water supply.—1. The water for use in the barn or washing milk utensils must be free from contamination.

The milk house.—1. A milk house must be provided which is separated from the stable and dwelling house.

2. It must be kept clean and must not be used for any other purpose than handling of milk.

3. The milk house, or any room where milk is handled, separated, churned, or kept, must be screened and protected against the entrance of dogs, chickens, flies, and all other animals, excepting human employees.

4. There must be suitable racks for cans, bottles, and utensils; these must not be allowed to sit on the floor.

The milk wagon.—1. The inside of the milk wagon must be kept clean.

2. All milk wagons must have a cover or other means of protection from the sun.

3. All containers of milk from which any part of the cream or butter fat has been removed must be labeled "skimmed milk" in letters 2 inches high.

4. Milk bottles must not be filled in the wagons or upon the street.

5. Driver must be free from a communicable disease and clean.

6. Name of firm or owner and license number must appear upon the outer sides of the wagon.

7. Milk sold on street must be in bottles or other containers approved by the health officer.

Milk bottles.—1. Must not be removed from house where there is a contagious disease without permission from health officer.

2. Caps of bottles must have the name of the producer stamped upon them.

3. Bottles must be thoroughly washed and boiled for 20 minutes or steam sterilized before filling following use for any purpose.

The utensils.—1. All milk utensils including all pails, cans, dippers, strainers, separators, churns, fillers, and cappers must be kept thoroughly clean and must be washed and scalded after each using. All utensils must be free from rust and roughened surfaces.

The milk.—1. Milk from diseased cows, containing visible dirt, or not in compliance with standard provided in these rules may be confiscated by a representative of the health department and destroyed.

2. No milk from a cow 15 days before or 1 week after calving must be sold.

3. If any part of milk from a cow is bloody, stringy, or unnatural, all of the milk must be rejected.

4. Anything added to or taken from the milk, in law, is adulteration.

5. Straining of milk must be done in milk house only.

6. All bottled milk must be bottled in dairy milk house or creamery.

7. Milk standard: Must not contain more than 88 per cent of fluid.

Must not contain less than 12 per cent of solids.

Must not contain less than 3.5 per cent butter fat.

Must not contain more than 50,000 bacteria per cubic centimeter.

Must not contain more than [sic] a temperature above 55° C.

8. Cream standard: Must not contain less than 18 per cent butter fat.

Must not be of a temperature above 55° C.

Must not have more than 50,000 bacteria per cubic centimeter.

Barnyard.—1. Must be well drained.

2. Manure must not be allowed to collect within 50 feet of barn, unless other provisions approved by the health officer is provided, or within 100 feet of milk house or well.

The milker.—1. No person suffering with or associated with a communicable disease must be allowed to handle milk or milk utensils.

2. Any case of contagious disease and every suspicion of a contagious disease must be reported at once to the health officer.

3. The clothing of the milker must be clean.

4. The hands of the milker must be washed and dried immediately before milking.

5. The hands and teats should be kept dry during milking.

6. The practice of moistening the hands with milk is prohibited.

7. Any person with ulcers or sores on his hands or fingers must not be allowed to milk.

8. Milking into an open bucket is prohibited. Milk pail must be approved by the health officer.

Penalty.—For each and every violation of rules the permit to sell milk may be revoked and it is further provided that the health officer must certify that the provisions of this article have been complied with before a license will be issued.

SEC. 17. This ordinance shall take effect upon the expiration of the present license period.

LOUISVILLE, KY.

Meat—Sale of—Inspectors.—Slaughterhouses—Sanitary Regulation. (Ord. Jan. 14, 1915.)

SECTION 1. *Sale of meat in city—When unlawful.*—The sale, offering, exposing, or having in possession for sale of any meat within the city of Louisville which has not been inspected by Federal, State, or municipal authority at the time of slaughter is hereby prohibited, as well as the bringing of any such meat into the city of Louisville for the purpose of sale, except as otherwise provided in section 7. It shall further be unlawful for any person, firm, or corporation to sell, expose, or offer, or have in possession for sale for human consumption, any meat which is in anywise not fit for such purpose.

SEC. 2. *Issuance of permits.*—It shall be unlawful for any person, firm, or corporation to sell, offer, or expose for sale within the city of Louisville any meat intended for human consumption, whether slaughtered within the city or elsewhere, unless such person or persons shall have a permit so to do from the department of health of said city, the same to be issued for a period of one year. Where any such person, firm, or corporation conducts or operates more than one place of business in the city of Louisville a separate permit shall be issued for each such place of business. Such permit shall be issued only upon the health officer being satisfied that the meat, before being offered for sale, has been and will be inspected, slaughtered, and stamped in accordance with the provisions of this ordinance, and that the equipment and method connected with the slaughtering, transportation, and sale of the product are sanitary and otherwise fit for the protection of the meat from contamination. The health officer shall issue permits when the provisions of this ordinance and State laws relating to meat inspection have been complied with by said applicant.

SEC. 3. *Appointment and salaries of inspectors.*—(a) The board of public safety, with the approval of the mayor, shall appoint for a term of two years a chief inspector of meats, who shall be a graduate of a recognized school of veterinary science having a course of not less than three years leading to a degree, and shall have had at least three years' experience in meat inspection; and no one shall be eligible to appointment as such inspector until he has passed a standard of examination equal to that

prescribed by the Bureau of Animal Industry of the United States Department of Agriculture for chiefs of equal rank in the meat-inspection service of the Federal Government. Said chief inspector shall receive a salary of \$1,800 per annum, payable monthly, and shall execute bond to the city of Louisville in the penal sum of \$3,000 for the proper discharge of his duties, the sufficiency of which bond shall be determined by the mayor.

(b) The board of public safety, with the approval of the mayor, shall also appoint one first assistant meat inspector for a term of two years, and may appoint such additional assistant meat inspectors for a term of two years as shall be necessary to carry out the provisions of this ordinance. Said assistant meat inspector or inspectors shall be graduates of a recognized school of veterinary science, and no one shall be eligible to appointment as such assistant inspector until he has passed a standard of examination equal to that prescribed by the Bureau of Animal Industry of the United States Department of Agriculture for inspectors of similar rank in the meat inspection service of the Federal Government. Each assistant inspector shall receive a salary of \$1,200 per annum, payable monthly, and shall execute a bond to the city of Louisville in the penal sum of \$1,000 for the proper discharge of his duties, the sufficiency of which bond shall be determined by the mayor.

(c) The board of public safety, with the approval of the mayor, shall appoint one lay inspector for a term of two years, and may also appoint one or more additional lay inspectors if necessary to carry out the provisions of this ordinance. Each lay inspector before appointment shall satisfy the board of public safety that he has had such experience in the inspection of meat and of the places where meat is handled as will qualify him to carry out the provisions of this ordinance other than the holding of post-mortem examinations; and no one shall be eligible to appointment as lay inspector until he has passed a standard of examination equal to that prescribed by the Bureau of Animal Industry of the United States Department of Agriculture for lay inspectors under the meat-inspection service of the Federal Government. Each lay inspector shall receive a salary of \$900 per annum, payable monthly, and shall execute a bond to the city of Louisville in the penal sum of \$1,000 for the proper discharge of his duties, the sufficiency of which bond shall be determined by the mayor.

(d) Any inspector appointed under this ordinance may be reappointed to the same office without standing another examination upon satisfying the board of public safety that he is qualified to perform the duties of said office. Said inspectors shall, after appointment, conduct their work under the direction of the health officer and may be removed by the board of public safety at any time for cause after being afforded an opportunity to be heard upon the ground for said removal. All of said inspectors shall be expected and required to devote their whole time to the performance of the duties of their respective offices.

SEC. 4. Duties of inspectors.—It shall be the duty of the chief meat inspector and his assistants to inspect and stamp all carcasses at the time of slaughter that are not inspected and stamped by Federal inspection; but all post-mortem examinations provided for herein shall be conducted by an inspector who is a veterinary and who shall be present at the time of slaughter.

In case any inspector shall be in doubt as to the existence of any diseased or injurious condition existing in any animal or in any meat, he shall have power to have such microscopic or other scientific investigation made as shall be necessary to determine the condition of such animal or meat, and he shall have the further power to take the same to any place necessary for making such examination.

It shall also be the duty of the chief meat inspector and his assistants to inspect slaughterhouses and other premises and all markets, stalls, refrigerators, and cars, wagons, and places where animals are slaughtered or where meat products are transported, kept, or offered for sale, to determine the wholesomeness and sanitary conditions of same.

Said inspectors shall make reports of all places and of all meat inspected, and of all meat or animals or carcasses condemned; and said report shall be made weekly and filed and kept in the office of the health department of the city as a public record. Said inspector shall immediately report all violations of this ordinance to the health office. Said inspectors shall perform any other duty required in carrying out the provisions of this ordinance.

SEC. 5. *Regulations of slaughterhouses.*—(a) Meats intended for sale in the city of Louisville shall be slaughtered in a slaughterhouse which is clean and sanitary and equipped for the proper protection of the meat. Such slaughterhouses shall have adequate water, free from contamination, and so as to be applied hot or cold. The slaughterhouse shall have suitable floors, constructed in such a manner as to be water-tight, and which shall carry off into tubs or reservoirs, or into the sewer, all blood and waste. The floors shall be thoroughly scrubbed and cleaned each day after the slaughtering is completed. The building shall be screened, and walls and all exposed surfaces inside the slaughterhouse shall be kept clean and sanitary. The slaughterhouse shall have an efficient system of drainage and sewer connections, so that no water or refuse of any kind shall soak into the ground. Provision shall be made for the prompt removal of the offal, for the cleaning of hooks, knives, implements, tubs, buckets, and other equipment, and the slaughterhouse shall be otherwise kept in a sanitary condition, and all meat and meat products inspected as required in detail by this ordinance and by such laws of the State as may be in force and such valid regulations as have been adopted thereunder for guidance in meat inspection.

(b) All toilet rooms and dressing rooms shall be entirely separated from compartments in which carcasses are dressed or meat products are cured, stored, packed, handled, or prepared. All such rooms shall be properly lighted, ventilated, and kept in a sanitary condition.

(c) Butchers who dress or handle diseased carcasses or parts shall cleanse their hands and then immerse them in a proper disinfectant and rinse them in clear water before dressing or handling healthy carcasses. All butchers' implements used in dressing diseased carcasses shall be sterilized either in boiling water or by immersion in a proper disinfectant, followed by rinsing in clear water. Facilities for such cleansing and disinfection, approved by the inspector in charge, shall be provided by the establishment. Separate sanitary trucks, etc., which shall be appropriately and distinctly marked, shall be furnished for handling diseased carcasses and parts. Following the slaughter of any animal affected with an infectious disease a stop shall be made until the implements have been cleansed and disinfected, unless other clean implements are provided.

(d) Carcasses shall not be inflated with air from the mouth, and no other inflation of carcasses, unless so labeled, shall be allowed. Carcasses shall not be dressed with skewers, knives, etc., that have been held in the mouth. Skewers shall be cleaned before being used again. Spitting on whetstones or steel when sharpening knives shall not be allowed.

(e) All offal shall be cleaned up and disposed of daily either by tanking or removal from the premises of the plant. The systems for and operation connected with the treatment of offal and condemned meats for fertilizer, grease or other purposes shall be in a separate building, or in a different part of the building from that in which the products intended for food are handled, separated by masonry, and no fertilizer or other product of the tanked offal shall be stored or brought into any place or room where products intended for food are handled or stored. Such tankage operations shall be conducted in a sanitary manner and with proper mechanical devices therefor, and the rendering and other rooms and equipment shall be cleaned daily, and there shall also be used a sufficient deodorizer to destroy all foul and offensive odors resulting from said operations.

(f) No animal intended for slaughter shall be fed on any uncooked meat or offal, or any meat or offal of a diseased animal.

(g) The health officer shall issue a permit for the operation of a slaughterhouse when, upon examination, it appears that the provisions of this ordinance and of the State laws relating to slaughterhouses have been complied with by said applicant. But where the applicant conducts more than one slaughterhouse in the city of Louisville a separate permit shall be necessary for the operation of each slaughterhouse, and each day that a slaughterhouse is operated or maintained without such a permit shall be deemed a separate violation of this ordinance.

SEC. 6. *Municipal slaughterhouses.*—The health officer shall designate a slaughterhouse, or slaughterhouses, which shall be constructed and equipped as provided for in this ordinance and at which inspection can be maintained, as the municipal abattoir or abattoirs. This shall be conditioned, however, upon the owners or lessees of the slaughterhouse agreeing in writing that all butchers and other persons may slaughter animals at such slaughterhouse at a uniform fee for slaughtering, which shall not exceed 75 cents for every carcass of beef and 40 cents for every carcass of hog, sheep, veal, or other animal. Each such slaughterhouse shall post in a conspicuous place therein the rates at which animals may be slaughtered at such house, and it shall be a violation of this ordinance to charge a different rate or rates from those so posted. The respective parties shall be free to make such agreements as they deem best for the sale or disposal of the offal of animals so slaughtered.

SEC. 7. *Inspection at time of slaughter—Exceptions.*—It shall be unlawful to sell, or offer, expose, or have in possession for sale, any meat in the city of Louisville which has not been inspected and stamped at the time of slaughter by Federal, State, or municipal authority, except carcasses of meat slaughtered by farmers or others not regularly engaged in the slaughtering of animals: *Provided, however,* That such carcasses shall be brought to the place of inspection to be designated by the meat inspector with such organs or parts of organs, naturally attached, as shall be required for the purposes of inspection, and such carcasses before being offered for sale shall be inspected and stamped as in other cases: *And provided further,* That nothing herein shall exempt Federal or other inspected meat from inspection as to fit condition for food when arriving for sale, or when exposed for sale in the city of Louisville.

SEC. 8. (a) *Condemnation—Stamping—Rendering.*—Whenever the meat inspector shall, by inspection, determine that any carcass, or part of a carcass, is diseased or otherwise unfit for food, the same shall be stamped or tagged in a manner so as to designate that it is unfit, and such meat shall not be brought into, or sold, or offered for sale, in the city of Louisville, but shall be tanked, or otherwise rendered unfit for food, under the supervision and in the presence of the inspector, who shall make a written report to the health department showing the amount and character of meat so condemned.

(b) The health department shall devise and enforce an adequate method of checking up and accounting for the disposition of all meat and carcasses condemned under the provisions of this ordinance in order to prevent meat being thereafter sold for human consumption. The person in whose possession said condemned meat may be left, or to whom it may be turned over, shall, as soon thereafter as practicable, report in writing to the health department how such meat was disposed of and the quantity of same, and any false statement so made by such persons shall be deemed a violation of this ordinance and shall in addition be sufficient ground for the revocation of the permit hereunder granted to the person, firm, or corporation making such false report.

SEC. 9. *Revocation of permit.*—(a) Any permit granted under this ordinance may be revoked whenever it is found that the conditions upon which the permit was granted are not being complied with; but no permit shall be revoked until the party proceeded against shall be summoned by notice in writing issued by the clerk of the

police court or his deputy, at the instance of any party complaining, which notice shall specify briefly the ground upon which said revocation is sought and shall be served in the manner required by the civil code of practice for the service of summons: *Provided also*, That said notice shall require the defendant to appear on the third day after the service of such notice, unless such third day be a Sunday or a holiday, in which event the defendant shall appear on the next regular week day that is not a legal holiday.

(b) The revocation of a permit shall *ipso facto* forfeit all license fees for the unexpired term for which such license fees were paid.

(c) No person whose permit shall have been revoked shall thereafter, directly or indirectly, through another person, obtain a permit under this ordinance within six months from the time of such revocation.

SEC. 10. *Inspection fees.*—The city shall collect the sum of 15 cents as an inspection fee for inspection of each carcass of beef, and 5 cents for the inspection of each carcass of swine, sheep, and veal at the time of slaughter, and shall collect the sum of 5 cents for each carcass of beef and 3 cents for each carcass of swine, sheep, and veal, and proportionate fractional fees for each part of such carcasses, of all animals which have been inspected elsewhere at the time of slaughter but which are required to be re-inspected to determine subsequent spoilage or fitness for food before offering for sale in the city of Louisville. The health department shall devise such method as may be deemed best for the time and manner of the collection of said fees and for checking up and accounting for same; and the sum so collected under the provisions of this ordinance shall be paid into the hands of the city treasurer and set apart solely for the purpose of carrying out the inspection provided for in this ordinance and paying the expenses thereof.

SEC. 11. *Marking—Misuse of stamp.*—The health officer shall designate a uniform method of marking meat which has been inspected and passed, and meat which is unfit for food, and any person, firm, or corporation counterfeiting, imitating, or not rightfully using the stamp of the Federal Government, the stamp of any State or other municipal inspection, or the stamp of the inspection of the city of Louisville, shall on conviction be fined not less than \$10 nor more than \$50 for each offense.

SEC. 12. *Fines.*—Any person violating any section of this ordinance, or who shall operate without obtaining a permit as herein provided, shall be fined not less than \$5 nor more than \$50 for each offense, except as otherwise herein provided, and each day that such violation continues shall be construed as a separate offense.

LYNN, MASS.

Refuse—Care and Disposal. (Reg. Bd. of H., Jan. 27, 1915.)

No person shall leave in or upon any public street, square, lane, alley, or other way within the city of Lynn, for removal by the health department, any waste paper, paper boxes, or excelsior except the same is securely confined in bags or sacks approved by the board of health, and in such a manner as to prevent their contents blowing about the streets.

The use upon any public street, square, lane, alley, or other way within the city of Lynn of barrels, boxes, or other open containers for waste paper, paper boxes, or excelsior, and the mixing of paper with ashes, is hereby prohibited.

Rummage Sales—Permit Required. (Reg. Bd. of H., Jan. 13, 1915.)

No person or persons shall conduct a "rummage sale" (so-called) in any dwelling or any other building in the city of Lynn without a permit from the board of health. Penalty not more than \$100.

Junk—Keeping of. (Reg. Bd. of H., Jan. 13, 1915.)

No person or persons collecting or buying old rags, paper, bottles, or junk of any kind shall keep or store the same in any room or cellar in any building in the city of Lynn, any part of which is used as a dwelling, or shall have it exposed in any yard without a suitable cover satisfactory to the board of health. Penalty not more than \$100.

MORRISTOWN, N. J.**Water-closets—Number Required. (Reg. Bd. of H., Jan. 11, 1915.)**

In all sewer-connected occupied buildings there must be at least one water-closet. In tenement houses and lodging houses there must be at least one water-closet on each floor, and when there is more than one family on a floor, there must be one additional water-closet for every two additional families.

Sewers—Connections with. (Reg. Bd. of H., Jan. 11, 1915.)

SECTION 1. Every owner of a dwelling house, apartment house, tenement house, flat, store, barn, stable, or other building used or occupied by human beings, shall construct a house lateral extending from said building to the main sewer in the street in front of the property upon which said building is situated or such other place as shall be designated by the sewer committee of the board of aldermen, and connect the same for use, within one month after the date of service of a written notice so to do. Said owner shall within said period of one month clean and then fill with clean earth or clean ashes all privy vaults, cesspools, and underground receptacles for filth located upon said premises. In case the owner does not reside on the premises in question, service on the tenant shall be sufficient.

The work shall be done in conformity with the provisions of the ordinances and rules of the town of Morristown and of this board.

SEC. 2. The owner of any premises along the line of any main sewer who shall not within 30 days after notification in writing from the board of health, make such connections shall forfeit and pay a penalty of \$25, and an additional fine of \$10 for each and every day after the said 30 days, in which the provisions of section 1 of this ordinance shall not be complied with.

SEC. 3. In streets where no main sewers have been constructed, permission to use cesspools may be granted by this board, but in no case shall permission to use cesspools be granted unless a water-closet or water-closets are installed in every building to be connected with said cesspool, under the provisions of sections 23 and 24 of the plumbing code of the board of health.

NEW YORK, N. Y.**Milk—Tuberculin Test of Cows. (Res. Bd. of H., Feb. 26, 1915.)**

Resolved, That the following regulations governing the tuberculin testing of cows producing grade A raw milk be, and the same are hereby, adopted to take effect immediately:

1. Only such animals shall be admitted to the herd as are in good physical condition as shown by a thorough physical examination, accompanied by a test with a diagnostic injection of tuberculin, within a period of one month previous to such admission. The test is to be carried out as prescribed in these regulations. A chart recording the result of the official test must be in the possession of this department before the admission of any animal to the herd.

2. Tuberculin tests shall be made as follows:

In the case of any herd which is found, when tested in accordance with these regulations, to be free from tuberculosis, the next general test of the herd shall be made within 12 months. Any herd in which one or more reactors shall have been

found shall be retested with tuberculin within 6 months and every reacting animal shall be excluded from the herd. Tests shall be conducted as follows:

During the 10 hours before injection four preinjection temperatures shall be taken at intervals of three hours. The first postinjection temperature shall be taken not later than six hours after injection; thereafter, temperature shall be taken at intervals of two hours, continuing until not less than 24 hours after injection.

3. If more than 10 per cent of the herd react to the tuberculin test, the entire herd shall be retested with tuberculin upon the expiration of 90 days, and each animal so retested shall receive a double dose of tuberculin at this test.

4. A rise of 2° over the highest preinjection temperature shall be considered a reaction, provided such rise of temperature can not be shown to be due to some other cause. A rise of 1½° F., in which there are consecutive temperatures above the normal extending over three or more intervals, shall be considered a suspicious reaction, and an animal having so reacted shall be removed from the herd. The interpretation of the "temperature curve" shall be left to the discretion of the veterinarian making the test subject to the approval of the department of health: *Provided, however,* That such veterinarian shall be a legally licensed veterinarian, whose tests are acceptable to the department of agriculture of the State of New York. A full report of the test shall be made on a chart approved by the department of health, which chart shall state the kind and quantity of tuberculin used in each test, the dates and hours at which temperatures were taken, a description of the animals tested, and the numbers of the tags attached to the same, and said report shall be duly signed by the veterinarian, submitted to the department of health, and by the department of health placed on file for inspection and record.

Milk—Standard for Pasteurization of. (Res. Bd. of H., Jan. 26, 1915.)

Resolved, That a temperature of 142° to 145° F. for a period of 30 minutes be and the same is hereby fixed as the official standard of the department of health of the city of New York for the proper pasteurization of milk.

NORFOLK, VA.

Drugs, Habit-forming, and Hypodermic Syringes—Sale and Use of. (Ord. Feb. 15, 1915.)

(1) It shall be unlawful for any person, except a registered pharmacist, to retail, sell, or give away any cocaine, alpha or beta eucaine, opium, laudanum, morphine, or heroin, or any salt or any compound containing any of the foregoing substances, and then only upon the written prescription of a duly registered physician, licensed veterinarian, or licensed dentist, except as hereinafter provided; and it shall be unlawful for any physician, veterinarian, or dentist to write, issue, deliver, or dictate, either directly or indirectly, any prescription or sell or give away any of the habit-forming drugs enumerated above to or for any habitual user: *Provided,* That nothing in this act shall prohibit any duly registered licensed physician from personally administering any of the above enumerated drugs or issuing a prescription directly to his patient for not more than 16 grains of opium, 8 grains morphine, 8 grains heroin, 8 grains cocaine, 8 grains alpha eucaine, 8 grains beta eucaine, 1 ounce laudanum, within any given 48 hours: *And provided also,* That this act shall not prohibit any bona fide sanitarium, hospital, or institution for the treatment of the sick, from administering the drugs above enumerated in such quantities as may be necessary in effecting a cure of patients addicted to their use. With every prescription issued in accordance with this ordinance shall be issued two copies thereof, one of which shall be attached to the original prescription delivered to the patient, and the other of which

shall be filed by the person issuing the same with the department of health within 24 hours after its issuance.

Said prescription shall contain the name and address of the person for whom the same is prescribed, and the date on which the same shall have been issued; and no druggist shall fill such a prescription unless there is delivered to him at the time said prescription is presented to him to be filled a copy of said prescription, and said druggist shall within 24 hours after filling such prescription file with the department of health the said copy of the said prescription, and shall note on said copy the date of filling the same, and shall permanently retain on his file the original prescription. Said prescription shall be filled but once, and no copy of it shall be taken by any person, except a copy may be taken by the department of health or their agents, and the original shall at all times be open to the inspection of the prescriber and officers of the law; except, however, that such cocaine, alpha or beta eucaine, opium, laudanum, morphine, heroin, may be lawfully sold at wholesale by a wholesale jobber or manufacturer upon the written order of a licensed pharmacist, duly registered practicing physician, licensed veterinarian, or licensed dentist: *Provided also*, That nothing in this ordinance shall be construed to prevent the legitimate administering of said drugs, their salts, compounds, and derivatives by a duly registered practicing physician, duly licensed veterinarian, or duly licensed dentist, to patients suffering from diseases other than the drug habit, or physical injuries, in such quantities as have already been set forth in this ordinance.

(2) It shall be unlawful for any person, other than a duly licensed physician, dentist, or veterinarian or trained nurse, to have in his or her possession an instrument commonly known as a hypodermic syringe or hypodermic needle, unless the same shall have been regularly prescribed or ordered by a duly licensed physician, dentist, or veterinarian: *Provided, however*, That this shall not apply to licensed dealers in drugs, drug supplies, or surgical instruments. It shall be unlawful for any person to sell, give away, or furnish to any person other than a duly licensed physician, dentist, or veterinarian, an instrument commonly known as a hypodermic syringe or hypodermic needle, without the written order of a duly licensed physician, dentist, or veterinarian. Every person who disposes of or sells at retail or furnishes or gives away to any person either of the above instruments, upon the written order of a duly licensed physician, dentist, or veterinarian, shall, before delivering the same, enter into a book kept for that purpose the date of the sale, the name and address of the purchaser, and a description of the instrument sold, disposed of, furnished, or given away and shall within 24 hours thereafter file with the department of health, in writing, a report showing the date of the sale, the name and address of the purchaser, a description of the instrument sold, disposed of, furnished, or given away, and the name and address of the physician, dentist, or veterinarian on whose written order the same was so sold, disposed of, furnished, or given away.

(3) Violation of any provision of this ordinance shall be punishable by a fine of not more than \$500 or imprisonment in jail for not more than six months, or both.

NORTH TONAWANDA, N. Y.

Milk and Cream—Sale of. (Reg. Bd. of H., Jan. 8, 1915.)

1. That all persons selling milk in this city be required to have a permit from the health officer and that all dairies furnishing milk and cream to this city be inspected and scored according to law.

2. That all stores selling milk and cream be required to display a certificate from the health officer in form like the following: "The milk and cream sold in this place is furnished by, whose license number is; and is of grade"

NORWOOD, OHIO.

Bakeries—Sanitary Regulation. (Reg. Bd. of H., Feb. 6, 1915.)

SECTION 1. All places used for any process of mixing, compounding, or baking for sale or for purposes of restaurants, bakeries or hotels, any bread, biscuits, pretzels, crackers, buns, rolls, macaroni, cakes, pies, or any food product of which flour or meal is the principal ingredient, shall be deemed bakeries for the purpose of this resolution.

SEC. 2. Every bakery shall be kept in a clean and sanitary condition as to its floors; side walls, ceilings, woodwork, fixtures, furniture, tools, machinery, pans, and utensils. All vehicles from which any bread or other bakeshop product is sold shall be kept in a clean condition, and all baskets or other containers in which any of the said products are conveyed through the streets shall be closely covered in a way to exclude dust, flies, and other sources of contamination. All parts of the bakery shall be adequately lighted at all times and shall be ventilated by means of windows, or skylights, or air shafts, or air ducts, or mechanical apparatus, if necessary, so as to insure a free circulation of fresh air at all times. Such ventilating construction and equipment shall be of such character that a complete change of air in all parts of the bakery may be made at least four times each hour: *Provided, however,* That it shall not be necessary to ventilate at such time or in such manner that the process of mixing or rising of dough shall of necessity be interfered with or prevented.

SEC. 3. The floor of every place used as a bakery, if below the street level, shall be constructed of concrete, cement, asphalt, or other impervious material, or of tile laid in cement, which floor may, if desired, be covered with a hardwood floor having tight joints. If above street level, the floor may be of hardwood, with tight joints, or may be of any impervious material, as above provided. The angles where the floor and walls join shall be made and maintained so as to be rat-proof: *Provided, however,* Nothing herein shall be construed to permit the use of a cellar or basement as a bakery.

SEC. 4. Every bakery shall be kept reasonably free from flies, and the doors, windows, and other openings of every such bakery shall, from April 1 to December 1, be fitted with self-closing wire screen doors and wire window screens. The side walls and ceilings shall be well and smoothly plastered, tiled, or sheathed with metal or wood sheathing and shall be kept in good repair. If made of mill construction with smooth surface, such walls and ceilings need not be sheathed or plastered. All walls and ceilings shall be kept well painted with oil paint or lime washed or calcimined, and all woodwork shall be kept well painted with oil paint.

SEC. 5. Every such bakery shall be provided with adequate plumbing and drainage facilities, including well-ventilated water-closets and impermeable wash sinks or iron supports. No water-closet compartment shall be in or in direct communication with a bakery.

SEC. 6. No person shall sleep or live in any bakery or in the room where flour or meal used in connection therewith or the food products made therein are handled or stored. If any sleeping places are located on the same floor as the bakery, they shall be well ventilated, dry, sanitary, and open to inspection. No domestic animal shall be permitted in a bakery or place where flour or meal is stored in connection therewith.

SEC. 7. All workmen and employees while engaged in the manufacture or handling of bakery products in a bakery shall provide themselves with slippers or shoes and a suit of washable material, which shall be used for that purpose only. These garments shall at all times be kept clean.

SEC. 8. Cuspidors of impervious material shall be provided and shall be cleaned daily. No employee or other person shall spit or discharge any substance from the nose, mouth, or any part of the body on the floor or side walls of any bakery or place where food products of such bakery are stored.

SEC. 9. The smoking, snuffing, or chewing of tobacco in any bakery is prohibited. Plain notices shall be posted in every bakery forbidding any person to use tobacco or to spit on the floor of such bakery.

SEC. 10. No person who has consumption, scrofula, or any venereal disease or any communicable or loathsome skin disease, shall work in a bakery, and no owner, manager, or person in charge of any bakery shall knowingly require, permit, or suffer such a person to be employed in such bakery.

SEC. 11. All rooms for the storage of flour or meal for use in connection with any bakery shall be dry and well ventilated, and every bakery and room used for the storage of materials and food products in connection therewith shall be so arranged that the shelves, cupboards, trays, troughs, bins, cases, and all other appliances for handling and storing the same can be easily removed and cleaned. No such materials or products shall be stored nearer to the floor than one foot.

SEC. 12. Every bakery shall be kept clean at all times and free from rats, mice, or vermin, and from all matter of an infectious or contagious disease.

SEC. 13. No bakery shall be located over or under or within 25 feet of any place or building where horses or cows are housed or maintained, or where the processes of rendering, glue making, fertilizer making and other foul-smelling products are carried on.

SEC. 14. Operatives, employees, clerks, and all persons who handle the material from which food is prepared, or the finished product before beginning and immediately after visiting a toilet or lavatory, shall wash their hands and arms thoroughly in clean water.

SEC. 15. The health officer and authorized inspectors and employees of the department of health shall have the right at all times to enter to make such inspection and such record of the condition of any bakery as they deem necessary, and if such inspection shall disclose a lack of conformity with this resolution the health officer may require such changes, alterations, or renovations as may be necessary to make such bakery comply with the provisions of this resolution, and in addition thereto any person failing to comply with the terms hereof may be prosecuted as provided by law.

Milk and Cream, Sale of—Pasteurization Required. (Reg. Bd. of H., Feb. 6, 1915.)

SECTION 1. It shall be unlawful for any person, firm, or corporation to sell, offer for sale, or have in his possession for the purpose of selling, or giving away, to any person or persons in the city of Norwood, any milk or cream which has not been pasteurized as hereinafter required.

SEC. 2. Milk or cream shall be deemed pasteurized within the meaning of this regulation if the same shall have been heated to a temperature of not less than 145° Fahrenheit, and held at that temperature for not less than 30 minutes; the health officer of the board of health or his assistants shall be empowered to inspect at all reasonable times the process of pasteurization, also the premises, apparatus, and conditions under which the same is done.

SEC. 3. Such pasteurization shall be done by the use of a Jenessen universal and wizard all holding system, and the apparatus shall be equipped with a brewer's long-stemmed thermometer: *Provided, however,* That the milk or cream which is obtained from any dairy or dairies which is under the direct control of a recognized milk commission of the Cincinnati academy of medicine, which is certified or inspected by such commission, shall not be required to be pasteurized as herein provided.

SEC. 4. This regulation to take effect and be in force from and after the first day of June, 1915.

SEC. 5. If any person, firm, or corporation vending milk or cream fails to comply with this resolution, his permit to vend milk or its products in the city of Norwood shall be revoked, and in addition thereto he may be prosecuted as is provided by law.

ORANGE, N. J.

Milk and Cream—Production, Care, and Sale. (Ord. Feb. 16, 1915.)

1. No person, firm, or corporation, either by themselves, their employees, or agents, shall have in possession, or hold or offer for sale, deliver, bring or send into the city of Orange, any unwholesome, watered, or adulterated milk, or milk known as "swill milk," or milk from which any part of the cream has been removed or from any diseased cow, or from any cow housed in a stable scoring below 60 per cent on the score card in use by the health department of the city of Orange.

There shall be included in the above designations of unwholesome, watered, or adulterated milk, the following:

- (a) Milk containing more than 88½ per cent of water or fluids.
- (b) Milk containing less than 11½ per cent of milk solids.
- (c) Milk containing less than 3 per cent of fats.
- (d) Milk drawn from animals within 15 days before or five days after parturition.
- (e) Milk drawn from animals fed on any substance (distillery grains included) in a state of decomposition or putrefaction.
- (f) Milk which has been diluted with water or other fluid, or to which has been added any foreign substance whatever.
- (g) Milk the temperature of which is higher than 50° F. or which contains an excessive number of bacteria.
- (h) Milk from cans which have not been thoroughly washed and then cleansed with boiling water or steam, both by the retailer at his bottling house and by the shipper or producer on the farm.
- (i) Milk containing any appreciable amount of sediment; "appreciable amount" when used in this ordinance being construed to mean anything more than a few minute particles in a quart of milk.
- (j) Milk produced, distributed, or sold in violation of any of the ordinances or rules or regulations of the board of health or board of commissioners.

2. No person, firm, or corporation, either by themselves, their employees, or agents shall offer, hold for sale, or deliver in the city of Orange, any unpasteurized milk or cream from cows which have not been subjected to the tuberculin test (subcutaneous) as herein set forth, at least once each year, and have passed the same without a reaction. All such animals shall have passed a physical examination in accordance with chapter 78 of the Laws of 1914 of the State of New Jersey.

The "tuberculin test" as used in this ordinance shall conform to the following:

- (a) Not less than two preinjection temperatures covering a period of not more than 12 hours and not less than six hours.
- (b) The first postinjection temperature shall not be taken later than the tenth hour after the injection. The taking of the postinjection temperatures shall not be more than 2 hours apart and shall be continued for at least 20 hours from the time of injection; and whenever at the twentieth hour a rising temperature is being recorded, additional temperatures must be taken and recorded until a definite reaction is established or the temperature of the animal drops to normal.
- (c) The veterinarian conducting the test shall first apply to the said board of commissioners for test charts. In this application shall be stated: The number of animals in the herd, the number to be tested, the name of the owner of the animals, the amount of tuberculin to be used, the kind of tuberculin (by whom prepared), giving the date of expiration, and the temperature and conditions under which such tuberculin has been kept while in the possession of the veterinarian. All test charts shall be returned to the office of the board of commissioners within 72 hours after the completion of the test, showing full details of each test, together with the ear

tag number of the animal, and shall have appended thereto the veterinarian's certificate stating the general health of all nonreacting animals.

(d) All reactors shall immediately be excluded from the herd, and the disposition of such reactors shall be reported to said board of commissioners at once. All suspicious or doubtful reactors shall be retested at a time to be designated by said board, and such retest shall conform to the requirements of the United States Bureau of Animal Industry governing such cases. All new cattle shall be tested between the ninetieth and one hundred and twentieth day from the time of entrance to the herd.

3. (a) Any animal suffering from a communicable disease shall be immediately excluded from the herd, and no milk from such cow, or from any cow in a condition that might impair the healthfulness of the milk, shall be sold or offered for sale in the city of Orange.

(b) Any producer supplying raw milk or cream to the city of Orange shall notify the board of commissioners, or cause it to be notified, at once of the removal of any cow, for any reason, from any herd, from which his supply is obtained. Such notification shall be in writing on blanks furnished by the board and shall give the ear tag number, the reason for such removal, and the name and address of the person who has just secured possession of the cow, in case the cow was removed alive from the premises.

When a cow is returned or added to a herd the board shall likewise be notified.

4. No person, firm, or corporation, either by themselves, their employees, or agents, shall have in possession or hold for sale, offer, deliver or bring into, or send into the city of Orange any milk or cream from a dairy or milk plant whose methods and equipment have not been approved by the board of commissioners of said city. The product of any dairy or milk plant whose methods or equipment at any time are not approved by said board may be excluded forthwith from the city of Orange.

5. (a) All milk and cream must be sold or delivered to the consumer in bottles. Exception: A special permit in writing may be granted by the said board of commissioners to deliver either milk or cream in another manner.

(b) All unpasteurized (raw) milk shall be sealed in cans or other containers at its place of production, and said containers shall not be opened, except by an officer duly authorized under the provisions of the State food and drug act, until the arrival at the plant where the bottling is to be done.

(c) In case the unpasteurized (raw) milk handled by a local retailer is produced on more than one dairy farm, whether shipped or conveyed to him direct or handled through a middleman, the cans shall be plainly labeled with the name and address of the producer.

(d) No person, firm, or corporation, either by themselves, their employees or agents, selling milk or cream in the city of Orange shall add to or change the source of supply without first notifying in writing the said board of commissioners of such change or addition. Such notice shall include the names and addresses of the contemplated supply, or those dropped, if such change is to be made.

(e) Every such person, firm, or corporation whose supply is obtained from five or more dairy farms shall file or cause to be filed a complete list of his or their supplies with said board of commissioners between the 1st and 10th of each month.

6. (a) "Pasteurized milk or cream" when used in this ordinance shall be construed to mean milk or cream heated to not less than 144° F. and not higher than 148° F. for at least 30 minutes, and then cooled immediately to at least 50° F.

(b) No milk or cream shall be pasteurized more than once, and all pasteurized milk or cream shall be bottled at the place of pasteurization.

(c) No person, firm, or corporation, either by themselves, their employees or agents, shall at any time pasteurize his or their supply or permit any part of it to be pasteur-

ized, without the written permission of the board of commissioners; nor shall any such person, firm, or corporation, either by themselves, their employees or agents, at any time sell as raw milk or cream, without the written permission of said board, any supply that he or they have been authorized or directed by the board to pasteurize.

(d) When in its opinion the public health requires such action, the board of commissioners may require that any milk or cream supply shall be pasteurized under the supervision of said board or its officers, such milk to be sold only as a pasteurized supply, until such time as the board decides that the necessity for such pasteurization no longer exists.

7. (a) Any milk or cream found to be adulterated or not produced in accordance with the provisions of this ordinance, which has been brought into, held, or offered for sale in the city of Orange, may be seized and destroyed by any duly authorized inspector of the board of commissioners.

(b) "Adulterated cream," as used in this ordinance shall be construed to mean any cream containing more than 1,000,000 bacteria per cubic centimeter or less than 18 per cent butter fat, or any foreign substance, or any form of preservative, or any appreciable amount of sediment.

8. No milk or cream shall be held for sale, sold, or delivered in the city of Orange unless at least 80 per cent of the samples, as shown by analysis made by or for the board of commissioners, contain a bacterial count within the limit prescribed by this ordinance: *Provided*, That no action will be taken to exclude any supply unless at least two samples taken on different days are found to contain more than the allowed number of bacteria.

9. In addition to the tuberculin tests already required by this ordinance, the board may, when in its opinion conditions warrant such action, require that a herd shall be retested, and no unpasteurized milk or cream from such herd shall be held for sale, sold, or delivered in the city of Orange until such a retest is made to the satisfaction of said board: *Provided*, That a five-day notice to make such test must be served by the board upon the person who is licensed to sell such milk or cream.

10. (a) All milk held, kept, offered for sale, sold, or delivered in the city of Orange shall be held, kept, offered for sale, sold, or delivered under the following grades or designations and under no other, and in accordance with such rules or regulations as may be adopted by the board of commissioners, and shall conform with the following standards and requirements:

Certified milk.

Grade "A" milk:

1. Selected milk—Raw—Tuberculin tested.
2. Selected milk—Pasteurized.

Grade "B" milk:

1. Inspected milk—Raw—Tuberculin tested.
2. Inspected milk—Pasteurized.

(b) No false or misleading statement or mark shall appear upon any container or be attached thereto.

Certified milk.—This milk must comply with the requirements of the State act of April 21, 1909, and the standards of the American Association of Medical Milk Commissions.

Grade A.

RAW, TUBERCULIN TESTED.

Cows.	Bacteria.	Dairies.	Labeling.
All cows must be in good physical condition and tested at least once a year with tuberculin, tagged, and the record filed with the board of commissioners not later than 72 hours after the test is completed.	Must not contain more than 50,000 from Nov. 1, to May 1; not more than 100,000 from May 1 to Nov. 1.	<i>Scores.</i> Must score 75 per cent or more on United States Bureau of Animal Industry score card.	Outer caps or tags shall be white, plainly marked in black letters stating: The grade, the name of the person, firm, or corporation offering for sale, selling, or delivering same, and the words "Tuberculin tested." The "A" shall be in block type at least $\frac{1}{8}$ inch in height.

PASTEURIZED.

All cows must have a physical examination at least once each year, by a veterinarian approved by the board; and a certificate of such examination shall be filed with the board not later than 72 hours after the examination.	Must not contain more than 200,000 before pasteurization, and not more than 30,000 when delivered to the consumer between May 1 and Nov. 1; and must not contain more than 100,000 before pasteurization and 10,000 when delivered to the consumer from Nov. 1 to May 1.	Must score 70 per cent or more on United States Bureau of Animal Industry score card.	Outer caps or tags shall be marked "Grade A, pasteurized," and shall state the name of the person, firm, or corporation offering for sale, selling, or delivering same; the place, the hour and day of week when pasteurized. The color of the tag or cap, and type, and the size of the "A" shall be the same as for the Grade "A" raw.
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Grade B.

RAW, TUBERCULIN TESTED.

Same as Grade "A" (raw).	Must not contain more than 100,000 from Nov. 1 to May 1, and not more than 300,000 from May 1 to Nov. 1.	Must score 65 per cent or more on United States Bureau of Animal Industry score card.	Outer caps or tags shall be exactly of the same form as for Grade "A" (raw), with the following exceptions: "B" shall be substituted for "A" and the lettering shall be in green.
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PASTEURIZED.

Same as Grade "A" (pasteurized).	Must not contain more than 750,000 before pasteurization and 75,000 when delivered to the consumer from May 1 to Nov. 1, and not more than 500,000 before pasteurization and 40,000 when delivered to the consumer from Nov. 1 to May 1.	Must score 60 per cent or more on United States Bureau of Animal Industry score card.	Outer caps or tags shall be of exactly the same form as for Grade "A" (pasteurized) with the following exceptions: "B" shall be substituted for "A" and the lettering shall be in green.
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11. Nothing in this ordinance shall be construed to prohibit from sale in the city of Orange any so-called "modified" milk, "skimmed" milk, condensed or evaporated milk or buttermilk, when plainly labeled as such. The sale of "modified" milk shall conform to chapter 40 of the State laws of 1911 and "skimmed" milk to chapter 217, section 9, of the laws of 1907.

12. Any person, firm, or corporation, either by themselves, their employees, or agents, who shall violate any of the provisions of this ordinance shall, upon conviction, forfeit and pay a penalty not to exceed \$50 for each offense.

13. Parts of all ordinances inconsistent with this ordinance are hereby repealed.

This ordinance shall take effect on the 1st day of July in the year 1915.

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